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# East Europe Report

ECONOMIC AND INDUSTRIAL AFFAIRS

No. 2445



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# EAST EUROPE REPORT

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FIGURES PROVIDED ON CEMA COMPUTER, ENERGY COOPERATION

East Berlin AW--DDR AUSSENWIRTSCHAFT in German Vol 11 No 25, 15 Jun 83 p 1

[Article by Information and Public Relations Department, GDR Ministry for Foreign Affairs: "Specialization and Cooperation Measures of CEMA Countries"]

[Text] The ratified multilateral integration measures plan of the CEMA countries for 1981/85 contains 13 specialization and cooperation measures for production which in consonance with the strategy of the CEMA countries are especially important for further stable economic development. They involve multilateral specialization and cooperation in production in the areas of:

- computer technology
- nuclear power plant equipment
- strip mining equipment
- tractors and farm equipment
- NC machine tools and automatic production lines
- drilling equipment and equipment for oil and gas prospecting
- antifriction bearings
- equipment for processing solid fuels, ferrous and nonferrous metals and mineral raw materials
- chemical products
- finishing parts for automobile production
- technical equipment for sugar refineries.

For these areas, existing agreements were defined in greater detail, expanded and extended; and new agreements were ratified.

Based on the agreement of 1980 dealing with specialization and cooperation in the development and production of computers, which was signed by all European CEMA countries and the Republic of Cuba, inter-CEMA exchange will more than double to 15 billion rubles for the 1981/85 period compared to the 1976/1980 period. Forty-eight percent of mainframe computers will come from the Peoples Republic of Bulgaria. Cuba will specialize in the production of various microcomputers.

More than 50 large factories and production combines are involved in fulfilling the agreement signed between the European CEMA countries and the

SFRJ in 1979 concerning specialization and cooperation in production of nuclear power plant equipment.

Mutual exchange within the framework of specialization in the production of strip mining equipment and equipment for processing solid fuels, ferrous and nonferrous metals and mineral raw materials will amount to more than 410 million rubles during the 1981/85 period. The principal exporters of strip mining equipment will be the Peoples Republic of Poland, the USSR and the GDR. The specialization agreement covering large strip mining machines includes 22 sizes of bucket-wheel excavators, 17 sizes of spreaders, 6 sizes of bucket-ladder excavators and 9 sizes of spoon dredgers and drag lines.

In the area of agricultural machines and tractors, the list of specialized machines will be doubled to 265. The following countries will specialize in but not be limited exclusively to the areas indicated, based on tradition and production experience:

- the Peoples Republic of Bulgaria in wheeled tractors for steep slopes, tractors for vineyards and front loaders,
- the GDR in harvester-threshers, grain cleaners, clearing machines and potato sorting machines,
- the Peoples Republic of Poland in potato haulm cutters, feed distributors and spreaders for liquid and solid fertilizers,
- the Socialist Republic of Romania in corn planters and rear loaders,
- the USSR in universal chopper tugs, equipment carriers, wheeled and tracked tractors, universal sowing machines and potato harvesting machines,
- the CSSR in tractors, self-operating mowing machines and universal crane loaders.

Mutual exchange will amount to more than 5 billion rubles during the 1981/85 period. The big suppliers will be the UVR, the GDR, the USSR and the CSSR.

Specialization and cooperation in the production of antifriction bearings will be intensified within the framework of the OZWI. Mutual exchange during the 1981/85 period will amount to almost 350 million bearings valued at more than 1.2 billion rubles, which is twice the amount exchanged during the period 1976/80.

Specialization and cooperation in the production of finishing parts for automobile production at the Volga Automobile Factory in Togliatti, USSR will be continued. Involved in this effort besides the USSR are the Peoples Republic of Bulgaria, the Hungarian Peoples Republic, the Peoples Republic of Poland and the CSSR. Mutual exchange will amount to about 760 million rubles during the 1981/85 period.

Mutual exchange from the agreement on specialization and cooperation in production of drilling equipment and oil and gas prospecting equipment will reach 850 million rubles during the 1981/85 period. A big supplier (drilling rigs, bit blocks and drilling pumps) will be the Socialist Republic of Romania.

Within the framework of a 1979 general agreement, the USSR will supply to the signatory nations during the 1981/85 period energy-intensive chemical products valued at almost 700 million rubles. These products include ammonia, methanol, HD and ND polyethylene and nitrogen fertilizers. From the partner countries, the USSR will receive less-energy-intensive chemical products valued at about 790 million rubles. These products include plant protection agents, PVC pipes, paints, pigments and bleaching agents.

The mutual exchange of technological equipment for sugar refineries will amount to about 320 million rubles during the 1981/85 period. An agreement dealing with the specialization of such equipment solidified the work distribution worked out for this area. The largest exporters are the GDR, the Peoples Republic of Poland and the USSR. The production of 18 different machines was transferred to the Republic of Cuba by this agreement.

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## POSSIBILITIES FOR IMPROVING MACHINE INDUSTRY EXAMINED BY CELIKU

Tirana RRUGA E PARTISE in Albanian May 83 pp 25-36

[Article by Hajredin Celiku, member of the AWP Central Committee Politburo and minister of industry and mines: "All the Possibilities Exist for Making Qualitative improvements in the Development of the Machine Industry"]

[Text] Under the constant concern of the party in implementing its policy in the socialist industrialization of the country, our machine industry was also established and is continuously being expanded; today, our machine industry is one of the most important branches of our socialist economy. Today, in our country, we have dozens of large plants and hundreds of machine bases producing about 14 percent of overall industrial production. Currently, our machine industry, along with the satisfaction of the needs for spare parts, is designing and producing machines and pieces of equipment for the construction of various projects, completely with our own forces.

Present achievements tell about the great development of this branch of the economy; they also tell about its great possibilities for progressing, for achieving the qualitative step forward required by the party for the development of the machine industry. "During the years of this 5-year plan," Comrade Enver Hoxha stressed at the Eighth AWP Congress, "the machine industry will be involved on a broader level in the production of equipment and machines for the construction of new lines and workshops and for various reconstructions and extensions of production capacities." (Enver Hoxha, "Report to the Eighth AWP Congress," p 24) To achieve this objective, it is expected that in the Seventh 5-Year Plan the production of the machine industry as a whole will be increased 37 percent, while, the production of machines, including complete producing lines and projects, will be increased 50 percent, increasing capacities and reinvegorating spare parts at approximately the same pace, as a path with very great economic advantage. This qualitative change makes it possible for the machine industry to pass into a higher level of development and to enter broadly on the road to machine construction. In 1985, it is stipulated that the proportion of the production of machines and equipment to spare parts will be 1.35 to 1.

## For Better Evaluation and Organization of Design Work

The high rates of increase of production of machines and equipment have set forth a number of important problems concerning the design of machines, especially their construction.

To meet the solution of these issues, many technical design organisms have been set up, operating at the grassroots and in the center, such as design bureaus in machine plants, design sectors attached to study-research institutes and, recently, specific groups of construction specialists in enterprises or institutes.

These organisms have solved important design tasks and have given valuable aid to the production of thousands of machines and pieces of equipment needed for our economy. Moreover, the design work is not properly preceding production, that is, in manner and the extent that it should; designs are not always handed over on time to production workshops and, in some cases, their quality leaves much to be desired. The lack of experience and sufficient training of some specialists who have been assigned to design tasks has been influential in these matters; and, of course, there also exist weaknesses in organizational and managerial work.

So far, because of the existing organizational structure, design work has been quite dispersed; there has not been the necessary single, technical and organizational management. In some cases, this has hampered the coordination of design work and, not infrequently, the technical bureaus and other design organisms have worked on their own, according to the tasks set forth before the government departments. And, in working each on his own, there have been parallelisms in designing and production, loss of time and failure to find the best variants and methods in designing, in constructing and so forth. Also, the design work has not been based on machines, calculating machines, models and experiments which increase precision, quality and rapidity in designing machines and equipment.

Those are the reasons why the party has set forth the task of carrying out a radical improvement in the organization of design work for the production of machines and equipment, especially in the present conditions of perspective development when design work is improving at very high rates; for example, during this 5-year plan, compared to the last 5-year plan, design work in the machine industry will increase 5 percent, without mentioning the complexity and the qualitative aspect of design work. The main thing in this direction is that all cadres must correctly understand that design work is an indivisible part, as a matter of fact the most important part, of the production process upon which depend technology, quality and production effectiveness. And, on this basis, the quality of construction designs must be radically improved, reorganizing, at a higher level, all designing forces which we have involved in this work, in order that construction designers rely on contemporary models of machines and not design outdated equipment and



machines, as has happened in some cases, so that designs of machines and mechanisms be complete and complex, including not only the simple mechanical construction of the aggregate and of its joints or various parts, and the design of their assembly, but also, according to the case and need, the electric aspect, automation and so forth, in accordance with the kinds of machines and their functions. In order to gain time in designing and in the rapid achievement of the production of machines and equipment with good quality and at low cost, we must broadly rely on standardization and unification.

To raise design work to a higher level requires new conceptions and a thorough study of all links, starting with the Institute of Mechanical Studies and Design, which must be entrusted with, and must control, all design work in order to eliminate parallelisms and unify design tasks, introducing as many as possible standardized elements (parts, mechanisms, joints, aggregates, machines and so forth), so as to bring design work as near as possible to practical production work in the technological and practical aspect, and to introduce new contemporary elements in the designing of machines.

At the present time, technological training and practical execution of construction designs are the weakest links in the machine industry. The solution of the best technological variant and, in its function, the preparation of the necessary technological documentation for every stage of the technological path, through which production, designing and the production of all necessary equipment will progress to the end, are very essential problems conditioning not only the rate of increase of production, but also its effectiveness in the machine industry.

One cannot think of quantitative increase and, even more, of a qualitative improvement of machines and equipment, without establishing and executing the proper scientific technology, in harmony with our conditions and possibilities, in the production of parts, joints and so forth, up to the process of assembling--the final link of the production of machines. This is an issue requiring great technical and scientific knowledge as well as a great deal of work. Thus, for example, the technological documentation filed for models, presses and equipment at the mechanical and thermal department, for cutting instruments, for instruments of measurement and so forth, for the production of parts for the DT-75 tractor, in comparison with its construction design, stands in the proportion of 1 to 208.

For determining the best technological variant of a part, joint or machine, many varied and complicated suppositions are presented.

In the field of technology of mechanical production and, in this framework, of machine production, contemporary literature provides a great deal of materials which we must attentively study and implement in accordance with our concrete conditions. Thus, for example, efforts are being made to generalize the technical experience gained by some areas in the best use of materials by increasing work in the sector for models, in foundry work, in pressing and blacksmith works and so forth. In fact,

advanced experience in these fields exists in many enterprises of our country, such as, for example, in the auto-tractor combine, the machine plant of the metallurgical combine, the agricultural machine plants in Korce and Durres, the machine plant in Stalin Town, the workshops of the Stalin textile combine in Tirana and so forth. Positive experience exists at the national and branch levels of the economy and in every district. However, this progressive experience is not being disseminated everywhere to the proper extent and with the proper speed some plants, and especially many machine workshops, still do not draft complete technological processes; apparatus and equipment are not designed everywhere; and the departments for the production of instruments are not properly organized for supporting real scientific preparation for production.

From the analyses made, it appears that the problems linked with the improvement of design technology and, in general, with the technical training of the organization of production on the most scientific bases have not been understood and evaluated with proper seriousness and with the force set forth by the party. In addition to organizational and managerial weaknesses of state and economic organs, in regard to the implementation of progressive experience, there has been obstruction because of artisan concepts, routine work and the shallow understanding of the tasks assigned by Comrade Enver Hoxha at the Eighth AWP Congress--that is, to place the technology of production on scientific bases and to adopt urgent and complete measures for the preparation of technological and construction designs for machines and pieces of equipment. The elevation of technology to a higher level and the increase of the tasks of the machine industry pose as an essential requirement the gradual increase of technical-designing forces. Comrade Enver puts great value on the issue of invigorating all links of study, design and experimental work from the grassroots to the center. "In regard to this great issue," he stressed, "it is essential that we think about how to organize it. On what basis? On what form? Dissemination and production on a massive scale run the risk of escaping control, specification, precision and responsibility."

In this framework, the criteria and limits which are now used for the structures and personnel of technological bureaus, are being reexamined and improved. The reorganization of technological designing forces will take place along with the reorganization of existing designing and construction forces. This is a necessary investment, with great economic effectiveness, in the machine industry. On the one hand, we must create the appropriate conditions for all specialists, innovators and talented workers so that they will take an active part in study-design work and, on the other hand, we must appoint more skilled workers to technical and technological bureaus, replacing those cadres who have shortcomings and who have not shown fitness for these important tasks. We stress this because of the fact that, in some cases, these scientific organisms are considered to be "comfortable corners," that any one can work in them and so forth and, consequently, some people who have failed to achieve good results in school and in practice, have been assigned to technical bureaus.

## Let Us Better Coordinate the Work for Complete Utilization of Production Capacities

The machine industry is spread everywhere in our country and is organized in large groups: in the form of plants with production tasks based on a specific nomenclature for the production of spare parts, of machines and equipment, and in the form of workshops with production tasks drawn up in value, but not concretized with specific nomenclature by article.

It is an indisputable fact that achievements have been good in all machine bases of the country. This is proven by the fact that the rates of development of the machine industry in the past 12 years have averaged about 12.9 percent every year; however, in the machine workshops, these rates have been lower, even though skilled specialists with great experience work in them. From the analyses made and from fact-to-face meetings with progressive workers, it appears that great and, so far, incompletely exploited reserves exist in all machine bases and workshops.

In order to place all our machine industry in the service of the satisfaction of the needs of the economy, it is necessary, first of all, to have a correct and partyminded understanding about the implementation of cooperation and coordination of the tasks between the government departments and within these departments themselves. It is important that this understanding be created everywhere about every problem of the economy, especially about the problems of the machine industry. Therefore, the Politburo of the party Central Committee recommends that: "Departmental favoritism and localism be fought; they become a serious obstacle to the rapid development of the economy, because they do not allow full utilization of all the possibilities and superior attributes of our socialist economy, which recognizes neither limitation of property nor regional or departmental limitation." We stress this because of the fact that the needs are always increasing and to satisfy them the coordination of all our forces and the best possible utilization of all this machine base, wherever we have it, is required, placing it at the disposal of the entire economy, regardless of the government department under whose jurisdictional administration it falls.

The correct understanding and execution of this party recommendation will make it possible to utilize all the productive capacities of the machine bases not only as worktime, but also especially as productive quality. However, this requires knowing very well the situation of every machine base, beginning with the parts which it produces, then how much it produces for its own needs, and how much it can produce for others and, on this basis, what is needed to fulfill the increasing tasks. The issue is that we must create such a conception permitting not only asking for quotas for producing a number of parts in the large machine plants, but also to put quotas at the disposal of others, within and outside the government department, for the nomenclature which it has fulfilled in accordance with specialization or which it can fulfill with greater efforts or with a small complement of machines and skilled specialists. This is indispensable, otherwise, the machine park and existing technical capacities in the service of the economy of the country cannot be fully utilized.



It is important that we carefully evaluate and take into consideration in our daily activity, the specifications of our country in the development of the machine industry in general, especially in the production of machines and equipment. At the beginning, we set up small repair bases which gradually grew in size and, later, were invigorated; today, most of these bases have been transformed into powerful bases which produce even machines. The real masters of our machine industry were born and multiplied together with these bases. Thus, for example, at the beginning the machine plant in Stalin Town was a repair and maintenance base; however, for a long time it has been producing important machines and equipment for the petroleum sector. Likewise, we can mention all agricultural machine plants and machine workshops in Vlere, Peshkopi and so forth. Great experience has been gained by the machine base of the knitwear combine in Korce, the machine workshop of the Stalin textile combine in Tirana, the machine base of the seaport in Durrës, and the motor pool workshops in Tirana and Shkoder and so forth; they have managed to produce difficult and complicated machines.

However, this experience and tradition must be studied, disseminated and driven forward. First of all, cadres and specialists who work in these machine bases must under the leadership of the party organizations, take upon themselves greater tasks than they have thus far. But, in this direction, restraining concepts can be noted. There are cadres who, unfamiliar with the developing experience of our machine industry or not wanting to create worries for themselves, want everything to be produced by large plants, instead of doing better work and better organization for the utilization of small workshops so that they will produce the most varied types of machines and equipment.

Of course, here the issue is not that everyone should individually produce what he needs for himself and what he can produce, but that on the basis of a real and properly coordinated plan, the existing technical capacities must be fully utilized. However, this requires that more serious work be carried out by the machine directorates of all ministries in regard to the study and knowledge of the real needs of the economy and of the producing capacities of every machine base. And, on this basis, the production tasks must be coordinated, placing specialists in more militant positions so that they will plan and fully utilize, broadly and widely, the producing capacities of every machine base of any ministry. In this framework, the necessity is born to reexamine the plans of every ministry regarding the production of machines and equipment with its own forces, by doing special studies for every workshop and every machine base, so that, starting in 1984, greater tasks be drawn up for them in accordance with their free capacities and technical possibilities. At the same time, measures must be taken so that, gradually and according to approved plans, these machine bases be further completed and invigorated in order to produce with good quality and advanced technology by expanding their planned cooperation. However, to achieve this objective, among other things, there must be determined fight against the concept that "the difficult parts can be

produced only at the metallurgical combine, at the Drini plant and at the auto-tractor combine." The possibilities are such that through the improvement of cooperative relationships in all links of the machine industry the best sector of the machine bases must produce the most difficult parts, but only on the basis of a properly studied plan.

#### The Increasing Tasks Cannot Be Fulfilled Without Planned Cooperation with Permanent Relationships

In the present stage of development of the machine industry, it is necessary that cooperation be improved, first at the ministerial level and, afterward, at the subministerial level, giving more importance than thus far to subministerial cooperation at the district or regional level for the production of a multitude of small articles in order to solve some problems more rapidly and to avoid long-distance transportation. The correct solution of these problems requires, as Comrade Enver Hoxha recommends, "undertaking better coordinated work at the national and district levels, overcoming every narrowminded local or ministerial interest and every bureaucratic obstacle." (Enver Hoxha, "Report to the Sixth AWP Congress" p 71)

It is a fact that as a result of the work done by the party, localistic and intraministerial trends have been dealt a serious blow, however, they are still manifested in the field of cooperation in one form or another form. Thus, for example, in some cases cooperation is still exclusively carried out on the basis of the enterprises of one ministry and, consequently, cooperative tasks are drawn up between faraway districts, thus, increasing transport expenditures, at a time when possibilities for cooperation exist within the district itself.

Of course, here, we do not speak about the great ministerial and subministerial cooperation needed for the production of complicated machines and equipment. This kind of cooperation is being improved and must be steadily improved in harmony with the conditions that have been created. In this framework, it is necessary for the cooperative relationships to be further improved in order to insure standardized joints and parts, such as electromotors, stepdown transformers, electrical equipment, gears, axles and other such parts which must be produced in specialized plants and, the latter must supply, on a regular planned manner, the small machine bases by creating possibilities for them to produce various kinds of machines and equipment. Of great importance for our country also is the further development of planned cooperation for the production of readymade castings and forged intermediate products. The small machine bases do not have the technical capacities to produce them; they can be produced only through cooperation at the ministerial or district level.

The expansion of centralization and specialization of production in the machine industry not only constitutes a very important factor for increasing labor productivity and improving the quality, but also a necessity for making the required step in the development of the machine-building industry. As a result of the work done to implement party

guidance, good achievements have been gained in this field. However, so far, in the organization of production in the machine industry, we have been aiming at specialization according to projects on the spot, in order to give priority to specialization according to technological similarity. Thus, for example, the production of the main plants has been divided according to projects and to their destination. Without referring to the Enver Hoxha auto-tractor combine, the UIK, the plant for the production of abrasive instruments and so forth, which produce for the entire machine industry, the Dinamo plant, for example, is entrusted with the production of machine for mines, the agricultural machine plants are entrusted exclusively with the production of agricultural machines, and so forth.

Experience is showing that the organization of production of technologically standardized parts, joints and so forth, produces good results, both in the direction of improving the quality and of increasing the effectiveness of the economy. In order to further expand this experience, some important studies have been made and are being put into practice. Thus, specialization of agricultural machine plants for the production of agricultural machines and the implementation of study on centralized production of hydraulic joints, of instruments, of presses, of forms and so forth are producing good results. Good work is being done in this field by the Enver Hoxha auto-tractor combine with the creation of centralized lines for the production of some main parts, setting up healthy bases for the scientific organization of machine production.

World experience and the experience of our country show that the setting up in technologically standardized line for group processing reduces the technical documentation by about 30 percent and equipment by 30-40 percent, increases productivity by 20-30 percent, and improves the quality of production. This is why studies must be extended in this field and concrete organizational and technical measures be taken so that, by 1985, specialized lines must be organized according to technological standardization for the production of the main parts of machines which are produced in series. The achievement of this objective requires that these matters be seriously taken into consideration by party organs and organizations. The latter must place the state and economic organs in the districts and ministries in more militant positions so that they will execute, more rapidly and correctly, the party guidelines on these matters, eliminating some shortcomings in their work, shortcomings which have been observed in some cases and have not yet been fully rectified.

The permanent task of the machine industry has been and is the assurance of the maintenance and improvement of technical readiness of the machine park at the disposal of the economy in order to support the fulfillment of the plan tasks, both through production and recycling of spare parts. The execution of the tasks assigned by the Eighth AWP Congress requires that, in this field, too, radical improvement of work be carried out, both in the field of expansion of assortments according to kinds and in the field of improvement of the quality of their production, and in the field of increasing the recycling of spare parts. We must place the

reinvigoration of spare parts of machines and pieces of equipment on healthier bases, both in the direction of setting up of repair technology (with relevant documentation, with necessary equipment and so forth,) and in the direction of recording and of their administration and treatment, because, despite improvements, there still are shortcomings and gaps.

The positive experience gained in these fields is quite good, especially the experience gained by the workers of the OA in Tirana, of the Gogo Nushi plant in Fier, of the machine tractor station in Shkoder and so forth; however, the efforts to disseminate this experience in all enterprises of the machine industry are not at the required level. In this field, important tasks also devolve on the Institute of Mechanical Studies and Design, especially, the technological bureaus and nucleuses in the enterprises which, in a programmed manner, must introduce new things in the field of the cycling of spare parts and machines.

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"Putting the machine industry on the broad road to machine production," Comrade Enver Hoxha stressed at the Eighth AWP Congress, "forcefully set forth the necessity for the training of workers and for the development of their creative thought, the necessity for the training of higher and middle cadres and the necessity for narrow profiles and specific specialities." (Enver Hoxha, "Report to the Eighth AWP Congress," p 25)

Efforts have been made and greater and greater efforts are being made to improve this party recommendation, but the solution of current acute problems, and of those of the future, demands that attention be concentrated on two main directions. First, on regrouping and better organizing the specialists who work in this branch so that their output and work quality be elevated to a higher level. Practice is showing that, in order to implement the shift required in the field of construction and technological design, it is necessary that specialists and mechanics with higher education be relieved of some simply administrative duties which they perform in shifts, sectors, units and work brigades--duties which can be performed without difficulty by middle-level technics, production masters and workers with high training and a long period in work. Second, work for the continuing training and preparation of new cadres, of specialists with higher and middle education and, especially of workers with high training in some specialities, where they are more needed, must be improved. For example, the issue of the training of skilled turners has now become very acute and its solution requires a better evaluation than until now by party organizations, seeing the issue in a broader and more complex manner, because, the lack of turners has become a disturbing matter for every machine enterprise. Perhaps, here there are issues regarding the correct execution of the requirements of the economic law on compensation according to work which should be taken into consideration and solved in a correct manner.



The training of higher cadres, especially of construction designers and technologists, demands particular attention. Life shows that a person who is to be engaged for design work must, first of all, be sent to a training course and, later on, be approved to be engaged. While, in our school programs, for example, in our middle schools for mechanical studies and the mechanical branch of Tirana University, the issue is that construction design and technology must be given a larger part than until now, so that cadres will learn, from school, the necessary know-how for creative, study and design work.

The evaluation to a higher level of designing and technical training for the production of machines, equipment and spare parts has given rise to a number of problems concerning planning and centralized management of these matters. Thus, for example, more attention must be devoted to the strengthening of plan discipline, from the grassroots to the center, in order to implement the criteria of planned methodology. The aim for the users is to present studied and sound demands for the machine industry products on expected deadlines and not to allow radical changes during the planned year. On the other hand, producers, plants, workshops and other machine bases must carefully study these demands and harmonize them with production capacities, expecting to fully utilize them, determine on time and correctly draw up the needs for the material base, and carry out the most complete technical preparedness for fulfilling them with good quality and on deadlines.

The practice up to now in this field has revealed a number of errors and shortcomings. Thus, for example, in accordance with planning methodology, the user's enterprises must present the producing enterprises with their demands for all the nomenclatures specified in quantity, assortments, quality and so forth, in December of each year for the year after the coming year, for example, in December 1982 for 1984. However, from the verification made, it results that the users' demands for 1984 were partial and incomplete in January 1983.

One may rightly ask the question: On the basis of such partial demands, is it possible for the producing enterprises to draft their balance sheets in a scientific manner for the mass utilization of their production capacities, to compare them with the users' demands and to prepare their balance sheets of production and distribution in kind according to quantities and assortments? Of course, this cannot be done properly and, consequently, the demands for raw material, specified in dimensions and quality, will not be exact and the work for the technical preparedness of production will be organized with shortcomings. This is why these matters must be properly taken into consideration by party organizations, so that correct understandings be strengthened and that relationships between producers and users be implemented with proletarian discipline, while, the executive committees of the district people's councils and the central government departments must exert their control and must demand that their enterprises correctly, and without relaxation, implement the criteria and demands stipulated in the methodology of the plan.

The present stage of development of the machine industry has brought more in evidence the need for improving the existing methodology and methods of planning. Thus, for example, the demands for new machines which are to be produced for the first time must be presented to the plants, workshops or responsible machine bases 1.5 to 2 years before the planned year. Such an improvement of methodology creates real possibilities for placing planning and cooperation on scientific bases and for the broad technical and complex preparation needed for production on schedule, with good quality and with a few expenditures as possible for machines and equipment.

Placing all work for improving technical, economic and financial indicators on more scientific bases has set forth the necessity for determining some single criteria with a normative nature for the measurement and evaluation of producing capacities and of the main single indicators of their utilization and so forth. Also, to put the planning of production and utilization of spare parts on more scientific bases, to better satisfy the needs of the economy for spare parts, and to prevent the creation of slow-moving stockpiles, the creation of stocks and the creation of disproportions in the satisfaction of the needs of the various sectors of the economy, it is necessary to reexamine the norms for using spare parts for those means and machines which, today, have norms and to determine, by 1984, the use of norms for machines and equipment which, until now, have not had norms.

In determining norms and in planning production and quotas for the supply of spare parts, particular attention is given to those parts which require great involvement of the machine base for their production and which are very expensive and have several-year lifespans. The planning of their production must be carried out attentively, based on the real situation and only when their replacement is essential, because holding them in warehouses for some years considerably reduces the effectiveness of the use of the technical-material base. However, at the same time, when their production is absolutely necessary, they must be given priority. In this framework, the possibility of establishing utilization norms for some serial machines is being studied and reexamined. In order to further discipline expenditures for the maintenance of means, of machines and equipment, especially those of transport, agriculture and so forth, it is necessary to take measures so that the norms for the use of spare parts be recorded and pursued for each individual part, and not on an overall basis at the enterprise level, as has been done thus far.

Life is showing that, besides the ideological measures to create correct understandings and the technical-organizational measures, it is necessary that reciprocal relationships between producers and users be better legalized than thus far, on the basis of the experience existing in construction. The issue is that criteria and deadlines of reciprocal obligation be determined, beginning with the delivery of projects to the time when they are put into operation and handed over to the investors. In this framework, of importance to the improvement of the nomenclature of the Council of Ministers, specifying the production of machines in nature and in value for every project.

So far, in the field of designing of the machine industry there have not been measurements and indicators through which design work could have been drawn up with precision and controlled. The time has come for some criteria with a normative nature to be determined, so that the plan discipline will be felt strongly even in this field, and so that the work comparison carried out in various design organisms and the best use of design specialists, be made possible.

Some shortcomings and gaps in the drawing up and execution of the plan for technical-material supply have influenced the failure to fulfill the tasks in some machine plants and workshops. Therefore, measures are being adopted to improve the design of raw materials and of necessary materials in harmony with the structure of the plan of production, carrying out more complete examination of existing norms and by abandoning some general and total norms, for example, such as norms for a ton-steel or ton-galvanized iron per 1,000 lik-production and by passing into physical norms, with the structure of production of spare parts, of machines, of equipment and so forth, according to branches of the economy.

The adoption of measures in these fields would create concrete possibilities for implementing the deadlines of the production of machines and equipment for the projects and for the effective and regular utilization of all machine bases of the country; it would also eliminate some harmful practices stemming from narrowminded and departmental conceptions carried by the present organization of work in some machine bases.

9150

CSO: 2100/62

## STATISTICAL DATA ON POWER CONSUMPTION IN 1982

Sofia ENERGETIKA in Bulgarian No 6, Jun 83 pp 7-18

[Article by Engineer Tatyana Prodanova and Engineer Boris Avramov, Ministry of Power Industry: "Load Rates of Electric Power Consumption in Bulgaria in 1982"]

[Text] The study of the load rates of electric power consumption in 1982 was based on information processed at the Main Information-Computer Center of the Ministry of Power Industry.

The gross consumption of electric power in 1982 was 43,103,000,000 kilowatt hours. The consumption which corresponds to the recorded loads and analyzed load rates within the power system is 42,976,000,000 kilowatt hours.

Compared with 1981 the annual growth was 6.8 percent or, in absolute figures, 2,741,000,000 kilowatt hours. Compared with the previous 16 years during which data have been published in this periodical, this is the highest increase in terms of absolute value (Table 1). The gross annual per capita consumption was 4,830 kilowatt hours.

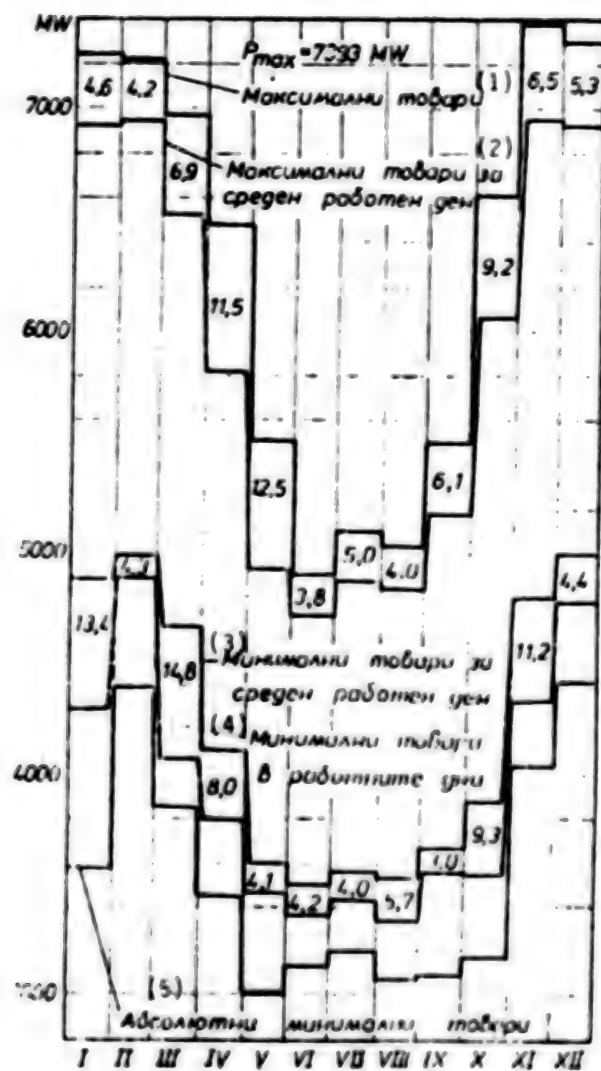
Another characteristic feature of the loads in 1982 was the maximal load which, unlike previous years, occurred in November instead of December. This is explained by the inordinately warm winter and the cooling of the temperature during the day of the maximal load. The last maximal load occurring in November was in 1966.

The maximal load carried by the power system in 1982 was recorded at 2000 hours on 25 November 1982--7,393 megawatts, with an annual usability of the maximal load of 5,813 h. This usability is higher compared to 1981 by 201 h. The annual increase of the maximal load compared with 1981 is 3.1 percent or, in absolute figures, 224 megawatts. The annual increase in the minimal load was 2.9 percent or, in absolute figures, 85 megawatts.

There were no restrictions in the power system in 1982, for which reason the loads followed their natural development. Figure 1 indicates the characteristic loads recorded during the year as well as the percentile deviations from the average loads per working day compared with the absolute loads.

The maximal loads of processed load rates per average working day deviate from the absolute maximal loads by 3.8-12.5 percent or an average of some 7.0 percent.





Фиг. 1. Характерни товари през 1982 г.

Figure 1. Characteristic loads for 1982

Key:

- |  |  |
|--|--|
| 1. Maximal loads                         | 3. Minimal loads per average working day |
| 2. Maximal loads per average working day | 4. Minimal loads per working day         |
|  | 5. Absolute minimal loads                |

The minimal loads per average working day deviate from the absolute minimal loads during working days by 3.0-14.8 percent, or an average of about 7.0 percent.

The comparative indicators of power consumption and the absolute maximal and minimal loads by month and the monthly usability of the maximal load and the density and peak coefficients for 1981 and 1982 are shown on Table 2. The increases in monthly power consumption ranged from 0.4 to 14.1 percent. Increases in maximal loads ranged between 1.2 and 10.3 percent. Minimal loads increased from 2.9 to 15.9 percent. It was only in January that the minimal load declined by 0.1 percent and it was in May that it showed no change. Most months in 1982 showed a higher density coefficient of the loads compared to 1981, with the exception of the months of April, May and July.

Table 1--Increased Electric Power Consumption and Absolute Loads in the Country

Таблица 1

Прираст на електроотреблението и абсолютните товари в страната

(1) Година	(2) Бруто електро- отребление	(4) Прираст на електроотребле- нието спрямо предишната година		(5) Прираст на максималния товар спрямо предишната година		(6) Прираст на минималния товар спрямо предишната година	
	(3) млн. kWh	%	(3) млн. kWh	%	(3) млн. kWh	%	(3) млн. kWh
1977	32930	6.0	1854	6.8	373	7.2	159
1978	35187	6.8	2257	4.4	254	5.8	137
1979	36124	2.7	937	2.3	139	-0.5	-13
1980	38536	6.7	2412	11.3	704	5.7	141
1981	40235	4.4	1699	3.6	247	11.2	295
1982	42976	6.8	2741	3.1	224	2.9	85

Key:

1. Year
2. Gross electric power consumption
3. Million kilowatt hours
4. Increased power consumption compared with previous year
5. Increased maximal load compared with previous year
6. Increased minimal load compared with previous year

The intensification of the summer drop, which had been invariably noted in recent years, stopped in 1982. The difference between the maximal load for the year and the lowest monthly maximal load was 2,496 megawatts, or 66.2 percent of the maximal for the year. The disparity for 1981 was 2,529 megawatts or 65.7 percent; it was 2,290 megawatts or 66.9 percent in 1980.

The increased consumption during the winter months was higher compared with the increase in the summer months, caused by the high share of energy used for heating.

A characteristic feature of the increased consumption during the winter months of 1982 was a considerably higher pace compared with 1981. The growth of the maximal loads was almost identical to their growth in 1981, with the exception of April, during which the highest growth of the maximal annual load was recorded. The highest growth of the maximal load for 1981 was in May.

The trend of packing the load diagram continued in 1982, with the exception of the months of May, June and October. During the other months we note an increase in the peak coefficient of absolute loads, with values changing from 0.481 for October to 0.641 for June (the coefficient in 1981 changed from 0.493 for October to 0.647 for June).

Table 2--Comparative Power Consumption Data for 1981 and 1982

Таблица 2

Сравнителни данни на електропотреблението за 1981 и 1982 г.

(1) Месеци	(2) Потребление			(5) Максимален товар			(6) Минимален товар			(7) Месечна употреби- ваемост		(8) Коэффициент на плътност			(9) Коэффициент на нарастваност		
	1981 г.	1982 г.	(3) про- рост	1981 г.	1982 г.	(3) про- рост	1981 г.	1982 г.	(3) про- рост	1981 г.	1982 г.			1981/1982	1981 г.	1982 г.	1981/1982
	млн. kWh (4)			MW			MW			h			1981 г.	1982 г.		1981 г.	1982 г.
10) Януари	3990	4257	6.7	6801	7238	6.4	3592	3590	-0.1	587	588	0.788	0.791	1.004	0.528	0.496	0.939
11) Февруари	3609	3946	9.3	6885	7225	4.9	4020	4397	9.4	524	546	0.780	0.813	1.042	0.584	0.609	1.042
12) Март	3540	4040	14.1	6663	6874	3.2	3520	3863	9.7	531	588	0.714	0.790	1.106	0.528	0.562	1.064
13) Април	3187	3495	9.7	5874	6481	10.3	3199	3549	10.9	543	539	0.754	0.749	0.993	0.545	0.548	1.006
14) Май	3083	3095	0.4	5480	5546	1.2	3013	3013	0.0	562	558	0.756	0.750	0.992	0.550	0.543	0.988
15) Юни	2807	2962	5.5	4640	4897	5.5	3000	3140	4.7	605	605	0.840	0.840	1.000	0.647	0.641	0.992
16) Юли	2999	3126	4.2	4762	5100	7.1	2928	3202	9.4	630	613	0.846	0.824	0.974	0.615	0.628	1.021
17) Август	2964	3053	3.0	4877	5023	3.0	2964	3068	3.5	608	608	0.817	0.817	1.000	0.608	0.611	1.005
18) Септември	2961	3014	1.8	5413	5494	1.5	3003	3090	2.9	547	549	0.760	0.762	1.003	0.555	0.562	1.014
19) Октомври	3219	3483	8.2	6158	6611	7.4	3033	3183	4.9	523	527	0.703	0.708	1.007	0.493	0.481	0.978
20) Ноември	3761	4129	9.8	6843	7393	8.0	3489	4044	15.9	550	558	0.763	0.776	1.017	0.510	0.547	1.073
21) Декември	4117	4376	6.3	7169	7302	1.9	3839	4420	15.1	574	599	0.772	0.806	1.044	0.536	0.605	1.130
22) За годината	40235	42976	6.8	7169	7393	3.1	2928	3013	2.9	5612	5813	0.641	0.664	1.036			

Key:

- |                           |                  |
|---------------------------|------------------|
| 1. Month                  | 12. March        |
| 2. Consumption            | 13. April        |
| 3. Growth                 | 14. May          |
| 4. Million kilowatt hours | 15. June         |
| 5. Maximal load           | 16. July         |
| 6. Minimal load           | 17. August       |
| 7. Monthly usability      | 18. September    |
| 8. Density coefficient    | 19. October      |
| 9. Peak coefficient       | 20. November     |
| 10. January               | 21. December     |
| 11. February              | 22. For the year |

Table 3 shows the basic indicators of load rates for typical days during the year, while Table 4 shows the ratio between daily power consumption by month and indicators of load rates per average Saturday, Sunday and Monday compared with an average work day. The peak coefficient for an average work day (the ratio between minimal and maximal load) changes from 0.642 (October, to 0.743 (June). In January 1981 this coefficient varied from 0.641 (October) to 0.737 (June). The highest were the load rates of October and November and the densest were the period from May through August. This pattern has been noted every year so far. The density coefficient (the ratio between the average and the maximal load) for an average work day changes from 0.804 (October) to 0.898 (June). For most months in 1982 the density coefficient per average work day was higher compared to 1981.

Table 3--Indicators of 1982 Load Rates

Таблица 3

Показатели на товарните графове за 1982 година

(1) Month	(2) Среден работен ден						(3) Среден празен ден					
	$P_{max}$	$P_{min}$	$P_{aver}$ AGE	$P_{max}$ average	$P_{min}$ absolute	$P_{aver}$ average	$P_{max}$	$P_{min}$	$P_{aver}$ AGE	$P_{max}$ average	$P_{min}$ absolute	$P_{aver}$ average
	MW						MW					
4) Януари	6918	4882	6031	0.946	0.706	0.870	5751	4246	4890	0.795	0.738	0.850
5) Февруари	6931	4993	6075	0.959	0.720	0.876	6167	4583	5218	0.854	0.743	0.846
6) Март	6482	4671	5582	0.943	0.721	0.861	5790	4231	4831	0.842	0.731	0.834
7) Април	5810	4107	5020	0.896	0.707	0.864	5141	3777	4261	0.793	0.735	0.829
8) Май	4928	3601	4311	0.889	0.731	0.875	4409	3100	3724	0.795	0.748	0.845
9) Юни	4719	3407	4240	0.964	0.743	0.898	4195	3209	3655	0.857	0.765	0.871
10) Юли	4856	3571	4317	0.952	0.745	0.889	4232	3278	3747	0.830	0.775	0.885
11) Август	4829	3527	4269	0.961	0.730	0.884	4086	3210	3623	0.813	0.786	0.887
12) Септември	5180	3670	4386	0.943	0.708	0.847	4419	3284	3725	0.804	0.743	0.843
13) Октомври	6051	3881	4865	0.916	0.642	0.804	5524	3582	4275	0.836	0.648	0.774
14) Ноември	6944	4804	5881	0.939	0.692	0.847	6365	4494	5192	0.861	0.706	0.816
15) Декември	6941	4998	6020	0.949	0.721	0.869	6277	4533	5252	0.860	0.722	0.837

Таблица 3

(продължение)

(1) Month	(16) Среден работен ден						(17) Среден празен ден					
	$P_{max}$	$P_{min}$	$P_{aver}$ AGE	$P_{max}$ average	$P_{min}$ absolute	$P_{aver}$ average	$P_{max}$	$P_{min}$	$P_{aver}$ AGE	$P_{max}$ average	$P_{min}$ absolute	$P_{aver}$ average
	MW						MW					
4) Януари	6359	4904	5615	0.879	0.771	0.828	6843	4499	5889	0.945	0.657	0.861
5) Февруари	6497	4191	5586	0.857	0.790	0.902	7038	4675	6005	0.974	0.664	0.853
6) Март	5791	4102	5193	0.842	0.795	0.897	6407	4303	5494	0.912	0.672	0.857
7) Април	5216	3845	4663	0.809	0.771	0.889	5738	3747	4856	0.885	0.653	0.846
8) Май	4540	3663	4057	0.819	0.807	0.894	4982	3337	4261	0.898	0.670	0.855
9) Юни	4489	3499	3951	0.900	0.794	0.896	4616	3242	4112	0.943	0.702	0.891
10) Юли	4454	3390	3966	0.873	0.784	0.890	4753	3297	4223	0.932	0.694	0.888
11) Август	4420	3538	3936	0.880	0.800	0.890	4741	3226	4142	0.944	0.680	0.874
12) Септември	4584	3656	4074	0.834	0.798	0.889	5213	3310	4288	0.949	0.635	0.823
13) Октомври	5320	3819	4451	0.805	0.718	0.837	6012	3533	4698	0.909	0.588	0.781
14) Ноември	6343	4770	5569	0.858	0.752	0.878	6986	4465	5769	0.945	0.639	0.826
15) Декември	6224	4944	5595	0.852	0.794	0.899	6932	4628	5950	0.949	0.668	0.838

Key:

- |                     |                      |
|---------------------|----------------------|
| 1. Month            | 9. June              |
| 2. Average work day | 10. July             |
| 3. Average Sunday   | 11. August           |
| 4. January          | 12. September        |
| 5. February         | 13. October          |
| 6. March            | 14. November         |
| 7. April            | 15. December         |
| 8. May              | 16. Average Saturday |
|                     | 17. Average Monday   |

Table 4--Ratio Between Power Consumption and Indicators  
of Load Rates for Saturday, Sunday and Monday  
in Terms of Rates for an Average Work Day

Таблица 4

Соотношения на електропотреблението и показателите на товарните графици за събота, неделя и последният ден към графика на средния работен ден

(1) Month	(2) Saturday					(9) Sunday					(16) Monday				
	(3)	(4)	(5)	(6)	(7)	(8)	(10)	(11)	(12)	(13)	(14)	(15)	(17)	(18)	(19a)
January	0.918	0.919	1.004			0.812	0.812	0.870	0.978	0.989	0.922				
February	0.919	0.893	0.980			0.859	0.890	0.918	0.989	1.015	0.936				
March	0.930	0.891	0.985			0.865	0.893	0.906	0.984	0.988	0.921				
April	0.929	0.901	0.985			0.849	0.885	0.920	0.967	0.968	0.912				
May	0.941	0.921	1.017			0.864	0.895	0.916	0.988	1.011	0.927				
June	0.932	0.934	0.998			0.862	0.889	0.915	0.970	0.978	0.924				
July	0.919	0.917	0.977			0.868	0.871	0.918	0.978	0.979	0.923				
August	0.922	0.915	1.001			0.849	0.846	0.910	0.970	0.982	0.915				
September	0.929	0.885	0.976			0.849	0.851	0.895	0.978	1.006	0.902				
October	0.915	0.879	0.984			0.879	0.913	0.922	0.966	0.993	0.910				
November	0.947	0.913	0.993			0.883	0.917	0.935	0.981	1.006	0.929				
December	0.929	0.898	0.989			0.872	0.906	0.907	0.988	1.000	0.926				

Key:

- |                              |                               |
|------------------------------|-------------------------------|
| 1. Month                     | 18. Average work day          |
| 2. Saturday                  | 19. Maximal average Monday    |
| 3. Average Saturday          | 19a. Maximal average work day |
| 4. Average work day          | 20. Minimal average Monday    |
| 5. Maximal average Saturday  | 21. Minimal average work day  |
| 6. Maximal average work day  | 22. January                   |
| 7. Minimal average Saturday  | 23. February                  |
| 8. Minimal average work day  | 24. March                     |
| 9. Sunday                    | 25. April                     |
| 10. Average Sunday           | 26. May                       |
| 11. Average work day         | 27. June                      |
| 12. Maximal average Sunday   | 28. July                      |
| 13. Maximal average work day | 29. August                    |
| 14. Minimal average Sunday   | 30. September                 |
| 15. Minimal average work day | 31. October                   |
| 16. Monday                   | 32. November                  |
| 17. Average Monday           | 33. December                  |

In 1982 there was a greater similarity between the maximal loads of an average work day and the absolute minimal monthly loads compared with 1981 (with the exception of January, May and July). The smallest difference was noted in June--0.964; the highest was in May--0.889 (the 1981 coefficient changed from 0.886 for March to 0.964 for June).

The density of load rates for a Sunday was lower compared to the density for an average work day with the exception of August. Power consumption per



average Sunday was lower compared with an average work day, with the exception of August. Power consumption per average Sunday was lower than power consumption for an average work day within the range of 11.7 percent (November) and 18.8 percent (January), or an average of about 14.0 percent.

The peak coefficient per Sunday changed from 0.648 (October) to 0.786 (August); compared with 1981 the figures are higher (with the exception of May, June and October).

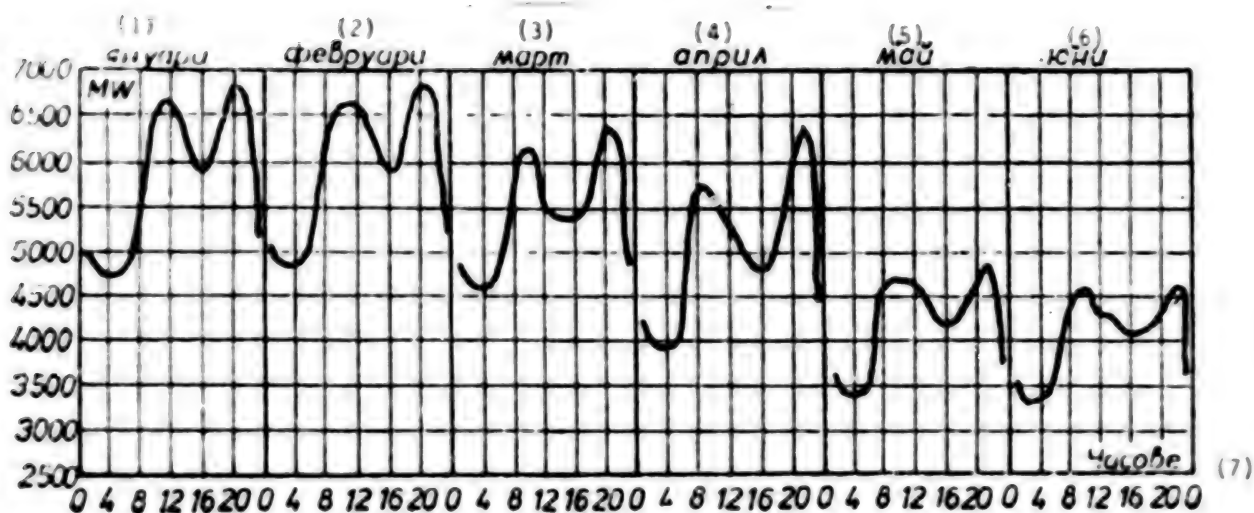
The maximal loads per Sunday are lower than per average workday by 8.3 percent (November)-16.8 percent (January); the minimal are lower by 6.5 percent (November)-13 percent (January).

The density of the load rates for an average Saturday is higher than for an average work day. An exception is noted only for June. The change ranges from 0.837 (October) to 0.902 (February). Compared to 1981, its values are higher (with the exception of October).

The change in the peak coefficient for an average Saturday fluctuates from 0.718 (October) to 0.807 (May), with values higher compared to an average work day and its values in 1981. Power consumption per average Saturday is lower than for an average work day by 5.3 percent (November) to 8.5 percent (October). Maximal loads are lower on an average than loads for an average work day between 6.6 percent (June) and 12.1 percent (October). Recorded minimal loads are closer to the average work day but surpass them by 2.3-1.7 percent in the months of January, May and August.

The density of the load rates for an average Monday is lower than the density for an average work day. The coefficient varies from 0.781 (October) to 0.891 (June). As in previous years, the peak loads are on Mondays and after holidays. The peak loads are on Mondays and after holidays. The peak coefficient varies from 0.635 (September) to 0.702 (June). The ratio between the average and absolute maximal loads for the individual months is closer to the ratio for an average work day. Power consumption per average Monday is lower than per average work day by 1.1-3.4 percent. The maximal loads are closer to the average work day and surpass them for the months of February, May, September and November, coinciding for December. The deviation varies from +2.2 to -1.5 percent. The minimal loads per average Monday range from 6.4 to 9.8 percent below the minimal loads per average work day.

The study of the load rates per average work day in 1982 in terms of the division of loads and electric power into basic, subpeak and peak zones may be seen in Table 5. The share of the basic electric power in daily power consumption per average work day is from 79.8 percent (October) to 83.7 percent (March and September). The respective figures for 1981 range from 77.8 percent (January) and 82.3 percent (July). Compared to 1981 the share of the basic power during the individual months of the year increased by an average of about 2 percent and more than 3 percent for the winter months. A virtually stable participation with an average in excess of 82 percent (with the exception of October) has been reached for the basic power within the limits of the entire year, where as in previous years we could note a clear demarcation between two zones: a summer period, with a higher percentile participation, and a winter period, with a lower one.

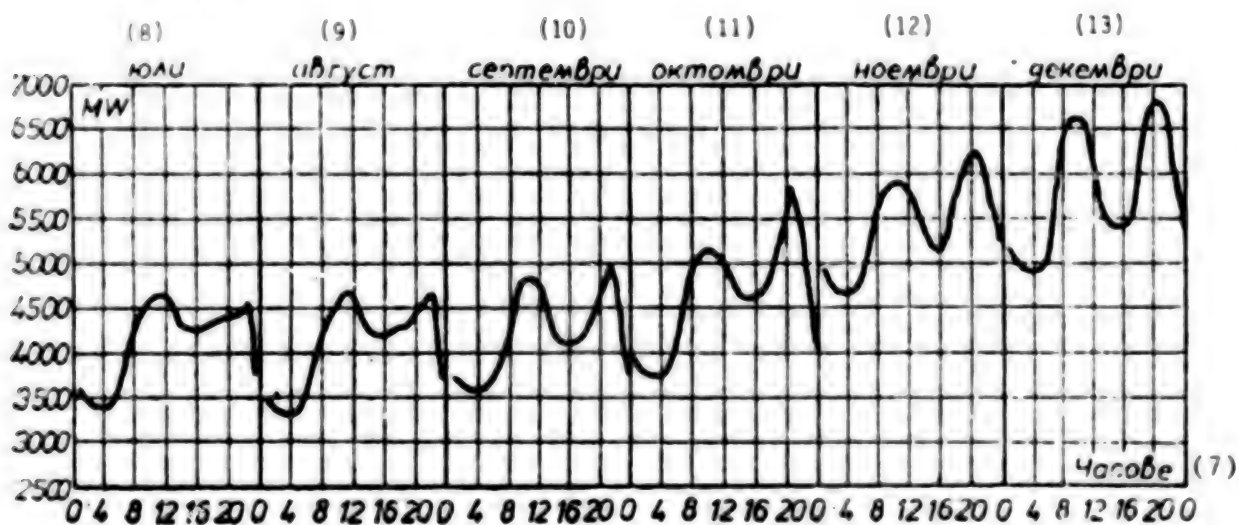


Фиг. 2. Товарни графици за среден работен ден през 1982 г.  
а) първа полугодие

Figure 2. Load rates per average work day in 1982  
(a) First half of the year

Key:

- |             |          |
|-------------|----------|
| 1. January  | 5. May   |
| 2. February | 6. June  |
| 3. March    | 7. Hours |
| 4. April    |          |



б) второ полугодие

Key:

- |               |              |
|---------------|--------------|
| 8. July       | 11. October  |
| 9. August     | 12. November |
| 10. September | 13. December |

Table 5--Study of the Load Rate Per Average Work Day in 1982

Таблица 5

Анализ на товарния график за среден работен ден на 1982 година

(1) Месец	(2) Ед. на среден работен ден	(3) Разпределение на дневното потребление в среден работен ден по зони								(8) Вре- мя на среден рабо- тен ден	(9) Разпределение на максималния товар в среден работен ден по зони								(10) Трайност на товара	
		(5) основна		(6) подпикове		(7) пикове					(5) основен		(6) подпикове		(7) пикове				(6) млн. кВт. ч	(7) млн. кВт. ч
		(4) млн. кВт.ч	%	(4) млн. кВт.ч	%	(4) млн. кВт.ч	%	(4) млн. кВт.ч	%		MW	MW	%	MW	%	MW	%			
																		(11) час		
(12) Януари	144511	117168	81.1	20396	14.2	6047	4.9	6918	4882	70.6	1139	16.5	897	13.0	18.0	7.7				
(13) Февруари	145807	119832	82.2	19493	13.4	6482	4.5	6931	4993	72.0	1082	15.6	856	12.4	18.1	7.6				
(14) Март	133988	112104	83.7	16245	12.2	5639	4.3	6482	4671	72.1	911	14.1	900	13.9	17.9	6.3				
(15) Април	120481	98568	81.8	16350	13.6	5563	4.7	5810	4107	70.7	913	15.7	790	13.6	18.0	7.0				
(16) Май	103480	86424	83.5	12864	12.5	4192	4.1	4928	3601	73.1	710	14.4	617	12.5	18.2	6.8				
(17) Юни	101768	84168	82.7	13542	13.4	4058	4.0	4719	3507	74.3	733	15.5	479	10.2	18.5	8.5				
(18) Юли	103625	85704	82.7	13498	13.1	4423	4.3	4856	3571	73.5	746	15.4	539	11.1	18.1	8.2				
(19) Август	102463	84648	82.6	13350	13.1	4465	4.4	4829	3527	73.0	742	15.4	560	11.6	18.0	8.0				
(20) Септември	105277	88080	83.7	12685	12.1	4512	4.3	5180	3670	70.8	716	13.8	794	15.3	17.8	5.7				
(21) Октомври	116769	93192	79.8	17242	14.8	6335	5.5	6053	3883	64.1	982	16.2	1188	19.6	17.6	5.3				
(22) Ноември	141151	115296	81.7	18851	13.4	7004	5.0	6944	4804	69.2	1077	15.5	1063	15.3	17.6	6.6				
(23) Декември	144494	119952	83.0	18216	12.7	6326	4.4	6931	4998	72.1	1022	14.7	911	13.1	17.9	6.9				

Key:

- |  |               |
|--|---------------|
| 1. Month   | 12. January   |
| 2. E <sub>d</sub> per average work day                         | 13. February  |
| 3. Breakdown of daily consumption per average work day by zone | 14. March     |
| 4. Thousand kilowatt hours                                     | 15. April     |
| 5. Basic   | 16. May       |
| 6. Subpeak   | 17. June      |
| 7. Peak  | 18. July      |
| 8. Peak, average work day                                      | 19. August    |
| 9. Breakdown of maximal load per average work day by zone      | 20. September |
| 10. Load duration  | 21. October   |
| 11. Hours  | 22. November  |
|  | 23. December  |

The subpeak energy varies from 12.1 (September) to 14.8 percent (October). The respective figures for 1981 are 13.3-16.2 percent. An average decrease has been achieved compared to 1981 of the share of subpeak energy by 1.2 percent, varying for the individual months between 0.1 (June and April) to 2.6 percent (November). In both the basic and subpeak power we note a comparative equalization of its relative participation over the year--an average of some 13.1 percent.

The participation of the peak energy in the overall breakdown ranges from 0.4 percent (June) to 5.5 percent (October), with 4.4 percent (June and July) to 6 percent (January) for 1981. An average drop has been achieved in the peak



energy for the individual months of the year of 0.6 percent compared with 1981. In the peak energy as well we note an even participation throughout the year, averaging some 4.5 percent of the overall share of the produced energy, per average work day.

Table 6--Study of the Breakdown of Daily Electric Power Consumption Per Average Work Day in 1982 By Hour Zones

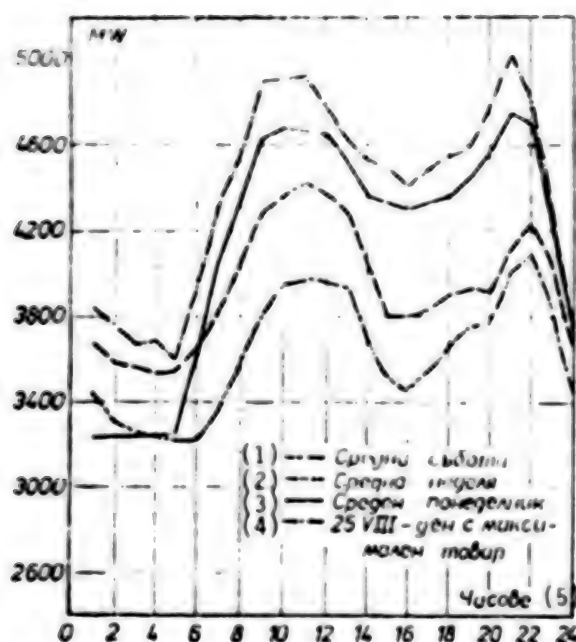
Таблица 6

Анализ на разпределението на дневното електропотребление за среден работен ден на 1982 г. по часови зони

(1)		(2)		(4) Разпределение на дневното електропотребление на среден работен ден по часови зони						(8) Средни зони на отделните часови зони за среден работен ден		
Месец	(3) млн. kWh	(5) денна		(6) нощна		(7) върхна		P <sub>ден</sub> MW	P <sub>нощ</sub> MW	P <sub>върх</sub> MW		
		(3) млн. kWh	%	(3) млн. kWh	%	(3) млн. kWh	%					
Януари	144511	56237	38.9	41244	28.5	47030	32.6	6249	5156	6718		
Февруари	145807	56673	38.9	42196	28.9	46918	32.2	6297	5274	6705		
Март	133988	57262	42.7	39353	29.4	37373	27.9	5726	4919	6239		
Април	120481	51679	42.9	34864	29.0	33938	28.1	5168	4358	5656		
Май	103480	44379	42.9	30580	29.5	28521	27.6	4438	3822	4754		
Юни	101768	48419	47.6	30125	29.6	23224	22.8	4402	3766	4645		
Юли	103625	49567	47.8	30275	29.2	23783	23.0	4506	3784	4757		
Август	102463	48883	47.7	29777	29.1	23803	23.2	4444	3722	4760		
Септември	105277	54810	52.0	30625	29.1	19842	18.9	4556	3828	4980		
Октомври	116769	44824	38.4	32947	28.2	38998	33.4	4980	4118	5571		
Ноември	141151	54144	38.3	40478	28.7	46529	33.0	6016	5060	6647		
Декември	144494	55146	38.2	42267	29.2	47081	32.6	6127	5283	6726		

Key:

- |  |               |
|--|---------------|
| 1. Month   | 12. January   |
| 2. E <sub>day</sub> per average work day                                   | 13. February  |
| 3. Thousand kilowatt hours   | 14. March     |
| 4. Breakdown of daily power consumption for average work day by hour zones | 15. April     |
| 5. Daytime   | 16. May       |
| 6. Nighttime   | 17. June      |
| 7. Peak  | 18. July      |
| 8. Average loads per individual hour zones per average work day            | 19. August    |
| 9. Day   | 20. September |
| 10. Night  | 21. October   |
| 11. Peak   | 22. November  |
|  | 23. December  |



Фиг. 3. Характерни товарни графици за август 1982 г.

Figure 3. Characteristic load rates for August 1982

Key:

- |                     |                            |
|---------------------|----------------------------|
| 1. Average Saturday | 4. 25 August--maximal load |
| 2. Average Sunday   | 5. Hours                   |
| 3. Average Monday   |                            |

The maximal load is distributed by zones as follows: basic--from 64.1 percent (October) to 74.3 percent (June), with an average increase compared with 1981 of 2.2 percent, or 4.9 percent for the winter months; subpeak--from 13.8 percent (September) to 16.5 percent (January), or an average decrease of 1.4 percent compared with 1981, with up to 2.6 percent for the winter months; peak--from 10.2 percent (June) to 19.6 percent (October), with a decrease for most months, mainly in winter, compared to 1981 (with the exception of May, July, August and October).

The duration of the subpeak load ranges from 17.6 to 18.5 hours; the duration of the peak load ranges from 5.3 to 8.5 hours.

The highest peak load noted in recent years has invariably remained October, which has increased by 114 megawatts, while the subpeak load, usually recorded in January, has dropped by 97 megawatts. The highest increase in the basic load was noted in December--419 megawatts.

It is obvious that in 1982 as well the trend of condensation of load rates and improved zonal daytime distribution continued in 1982 as well. The share of the basic electric power and the basic load increased at the expense of the subpeak and peak electric power and load. The drop in the subpeak energy and load was greater. A virtually steady distribution among the basic, subpeak and peak energy by zone was achieved throughout 1982.

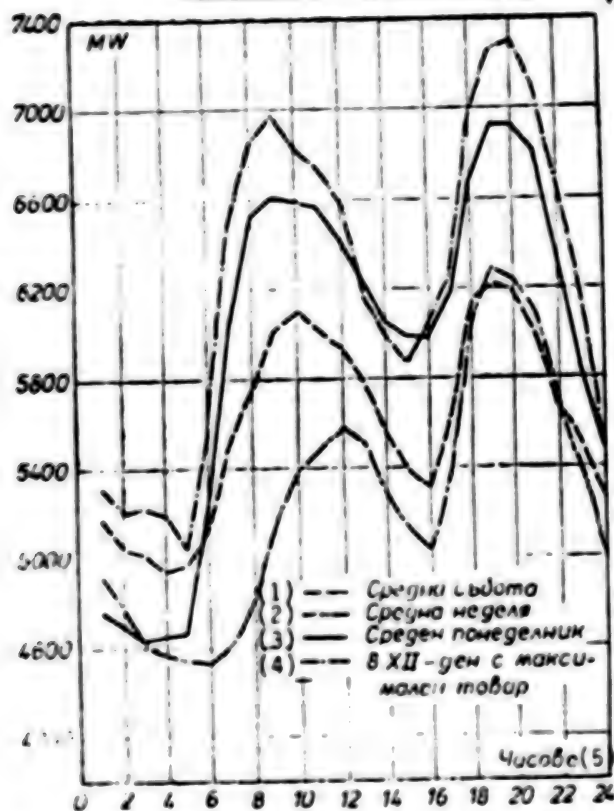


Figure 4. Characteristic load rates for December 1982

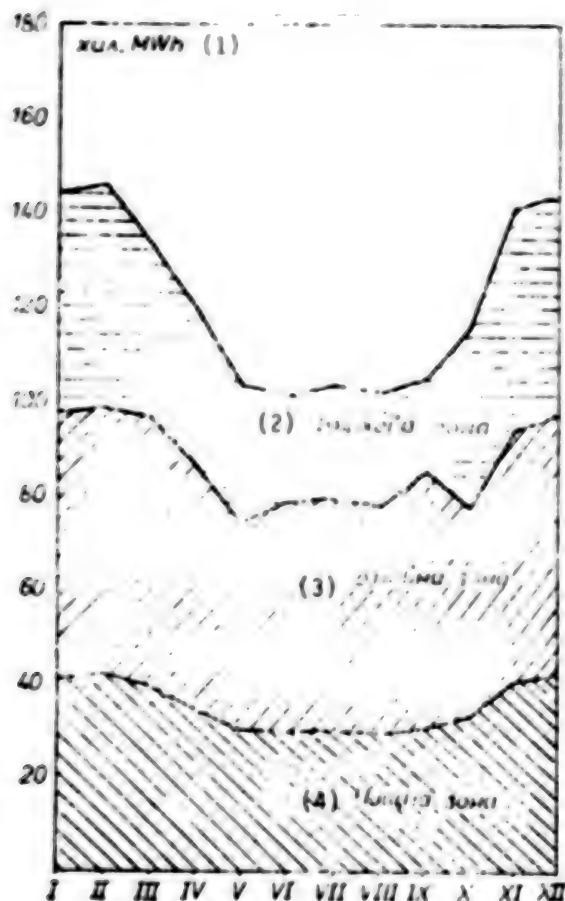
Key:

- |                     |                                 |
|---------------------|---------------------------------|
| 1. Average Saturday | 4. 8 December--maximal load day |
| 2. Average Sunday   | 5. Hours                        |
| 3. Average Monday   |                                 |

Table 6 indicates the breakdown of daily power consumption per average work day by time zones--daytime, nighttime and peak. The zonal breakdown is based on the regulatory order issued by the minister of power industry for 1982. The study was made from the systems viewpoint by separating the load chart into vertical zones. The results are noncomparable to the share of daytime, nighttime and peak electric power used by and paid for by the consumers.

The share of nighttime electric power fluctuates from 28.2 percent for October to 29.5 percent for May. During the individual months of the year its share fluctuated within the 1.3 percent year, being slightly higher in the summer compared with the winter. The conclusion may be drawn that the percentage of nighttime energy is almost stable for the year and that daylight saving time had no effect on it. For the sake of comparison, in 1981 the share of nighttime energy changed from 27 to 29 percent and a 29 percent share was noted throughout the daylight saving time period.

The percentage of daytime energy fluctuated far more, from 38.2 percent (December) to 52.0 percent (September). It ranged between 39 and 48 percent in 1981. The characteristic feature for 1982 was the increased participation of daytime energy in the period from June to September, with an average of about 48 percent as a result of the narrowing of the peak zone during that period. During the winter its share remained virtually stable, averaging



Фиг. 5. Разпределение на енергията на среден работен ден по зони

Figure 5. Breakdown of power per average workday by zone

Key:

- |                            |                   |
|----------------------------|-------------------|
| 1. Thousand megawatt hours | 3. Daytime zone   |
| 2. Peak zone               | 4. Nighttime zone |

some 39 percent. The greatest difference compared with 1981 was in June and July--8 and 9 percent respectively, when the peak zone accounted for the largest share of the day.

The peak electric power within the average work day changed from 18.9 percent (September) to 32.6 percent. The lowest peak energy share was in the period from June to September, about 23 percent; the highest was reached in the winter. Compared with 1981 its share dropped by 1 percent in March, 8 percent in June, 9 percent in July and 5 percent in September, with the only increase of 4 percent in October.

Table 7 shows that the peak zone in the evening hours is more noticeable during months with lower temperatures compared with the summer months. This is explained by higher domestic consumption, whereas the peak zone during the morning hours remains relatively even throughout the year.

Table 7--Study of the Speed in the Change of Loads  
Per Average Work Day in 1982

Таблица 7

Анализ на скоростите на изменение на товарите за среден работен ден на 1982 г.

(1) Показатели, MW/h	(2) Месец											
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
(3) Скорост на нарастване товарите по време на сутрешната върхова зона	404	278	199	403	169	216	240	239	156	215	308	372
(4) Скорост на нарастване товарите по време на вечерната върхова зона	345	207	502	322	122	55	7	175	308	331	538	568
(5) Скорост на снижение на товарите по време на сутрешната върхова зона	70	64	62	88	49	63	66	84	24	89	68	112
(6) Скорост на снижение на товарите по време на вечерната върхова зона	412	363	383	572	467	218	221	355	386	536	436	424
(7) Максимална скорост на нарастване на товара в сутрешните часове	782 6-7	865 6-7	763 6-7	640 6-7	565 6-7	459 6-7	430 6-7	446 6-7	505 6-7	747 6-7	880 6-7	755 6-7
(8) Максимална скорост на нарастване на товара във вечерните часове	410 18-19	531 18-19	503 18-19	285 19-20	124 19-20	109 18-19	90 18-19	176 20-21	317 19-20	746 18-19	539 17-18	562 17-18
(9) Максимална скорост на снижение на товара през деня	109 11-12	139 11-12	156 11-12	155 11-12	75 11-12	63 10-11	66 11-12	84 11-12	72 11-12	138 11-12	202 11-12	137 11-12
(10) Максимална скорост на снижение на товара вечерта	411 21-22	363 21-22	384 21-22	86 21-22	507 22-23	530 23-24	525 23-24	509 23-24	565 22-23	621 22-23	583 23-24	561 23-24
(11) Отношение между максималната скорост на нарастване на товара и максималния товар в %	11.3	12.5	11.8	11.0	11.5	9.7	8.8	9.2	9.7	12.3	13.9	10.9
(12) Отношение между максималната скорост на снижение на товара и максималния товар в %	3.9	5.2	5.9	2.7	10.3	11.2	10.8	10.5	10.9	10.3	9.2	8.1

Key:

1. Indicators megawatts per hour
2. Month
3. Speed of growth of loads during the morning peak zone
4. Speed of growth of loads during the evening peak zone
5. Speed of drop of loads during the morning peak zone
6. Speed of drop of loads during the evening peak zone
7. Maximal speed of growth of the load during the morning hours
8. Maximal speed of growth of the load during evening hours
9. Maximal speed of load drop during daylight hours
10. Maximal speed of drop of the load in the evening
11. Ratio between the maximal speed of growth of the load and the maximal load in percentage
12. Ratio between the maximal speed of drop of the load and the maximal load in percentage

The maximal speed of growth of the load in the morning is quite clear in the interval between 6 and 7 am, with substantial loads ranging from 430 to 880 megawatts.

The positive effect of the summer daylight saving time is seen most clearly from the data of the maximal speed of growth of the load during the evening hours. The values from April to September are significantly below those of the remaining months as a result of the extension of the daylight hours, yielding positive results in terms of power consumption.

The ratio between the maximal speed of growth of the load and the maximal load fluctuates from 8.8 to 13.9 percent, while the ratio between the maximal dynamics of the load and the maximal load ranges from 2.7 to 11.2 percent. These percentages are relatively high and indicate some difficulties in the system, which must be resolved for specific hour zones of the load diagram.

The average load figures for a work day in 1982 may be found on Figure 3. Figures 3 and 4 indicate the load rates per average Saturday, Sunday and Monday in August and December 1982 and for the day with a maximal load for the year (25 November).

The balance of the capacities of the power system on the hour of the recorded maximal load of the year--8 pm on 25 November 1982--is shown on Table 8. The maximal load for the country reached 7,393 megawatts during that hour, with an export of 320 megawatts. In other words, the power system covered the maximal load of 7,713 megawatts. The power system covered the maximal load at a frequency of 49.14 hertz, led by the power system of the USSR, with imported power of 810 megawatts. The recorded minimal load for the same day was 5,082 megawatts at 5 pm, with an export of 180 megawatts, or the minimal load of the system was 5,262 megawatts at a frequency of 49.43 hertz and an import of 300 megawatts.

The balance of the capacities of the electric power system for the hour of the maximal load shows that sources with an overall capacity of 1,133 megawatts, or 14.7 percent of the maximal load, were in the stage of planned repairs, cold reserve, lack of water, etc. Another group of sources totaling 19.3 percent of the maximal load operated without producing power for a variety of reasons. Furthermore, 20.7 percent of the working capacities remained free and unused, some of them performing the functions of a revolving systems reserve.

Obviously, in order to meet the maximal load, the power system had some reserve capacities as a result of which power consumption was not restricted, and capacities and energy totaling 4.1 percent of the maximal load of the system were exported.

During the day of the maximal annual load the power system worked on a parallel basis with the Moldavian system. During the hour of the peak load 810 megawatts or 10.5 percent of the maximal load of the system were imported through the 400 kilovolt Vulcanesti-Dobrudzha intersystems cable. The 220-kilovolt Boychinovtsi-Craiova intersystems cable and the 110- and 220-kilovolt connections with Yugoslavia were shut off.



The 220-kilovolt power cable linking the Bulgarian and Turkish power systems --the Dima Dichev-Babaeski substations carried 220 megawatts. The 220-kilovolt Bobov Dol-Seres power cable carried 100 megawatts.

The TETs [thermoelectric power plants] involved in the systems participated in covering the maximal load with 79.3 percent of their working capacity and account for 46.3 percent of the overall load with a total of 4,853 megawatts of installed capacity. Their available capacity was 4,847 megawatts or 99.9 percent of the overall installed capacity of the TETs, 86.6 percent of which are operative.

Table 8--Balance of Capacities by Hour for the Maximal Load:  
2000 Hours on 25 November 1982

Таблица 8

Баланс на мощностите по време на максимален товар — 20 ч. на 25. XI. 1982 г.

(1) Показатели	(2) Мощност						(7) Мощности в резерв, студен резерв и др.		(8) Участие в максимален товар			(11) Участие в минимален товар			(12) Горещ резерв	
	(3) $P_{\text{инст}}$ MW	$P_{\text{дост}}$ (4)		$P_{\text{дос}}$ (6)		(5)		(9)		(10)		(9)		(12)		
		MW	%	MW	%											
						MW	%	MW	%	MW	%	MW	%	MW	%	MW
ТЕЦ	4853	4847	99.9	4201	86.6	646	13.3	3333	79.3	43.2	2818	67.1	53.6	868	20.7	
НЕЦ	1859	1884	99.4	1637	86.4	247	13.0	1267	77.4	16.4	27	1.6	0.5	370	22.6	
в т. ч.																
подготовителни	1685	1682	99.8	1551	92.0	131	7.8	1181	76.2	15.3	3	0.2	0.1	370	23.8	
на течащи води и дневно истраиване	210	202	96.2	86	40.9	116	55.3	86	100.0	1.1	24	27.9	0.4	—	—	
АЕЦ	1760	1760	100.0	1760	100.0	—	—	1760	100.0	22.8	1605	91.2	30.5	—	—	
Общо МЛ	8508	8491	99.8	7598	89.3	893	10.5	6160	83.7	82.4	4450	58.6	84.6	1238	16.3	
Заводски централи	991	991	100.0	751	75.8	240	24.2	543	72.3	7.1	512	68.2	9.7	208	27.7	
Общо за страната	9499	9482	99.8	8349	87.9	1133	11.9	6903	82.7	89.5	4962	59.4	94.3	1446	17.3	
Внос	850	850	100.0	850	100.5	—	—	810	95.3	10.5	300	25.3	5.7	40	4.7	
Общо ресурси	10349	10332	99.8	9199	88.9	1133	10.9	7713	83.8	100.0	5262	57.2	100.0	1486	16.2	
Износ	—	—	—	—	—	—	—	320	—	4.1	180	—	3.4	—	—	
Товар на страната	—	—	—	—	—	—	—	7393	—	95.9	5082	—	96.6	—	—	
Резерв в % от $P_{\text{макс}}$	—	—	—	—	—	14.7	—	—	—	—	—	—	—	—	19.3	

Key:

- Indicator
- Capacity
- $P_{\text{installed}}$
- $P_{\text{available}}$
- Percentage of  $P_{\text{installed}}$
- $P_{\text{operational}}$
- Capacities undergoing repairs, cold reserve, etc.
- Participation in maximal load
- Percentage of  $P_{\text{operational}}$
- Percentage of  $P_{\text{maximal}}$
- Participation in minimal load
- Percentage of  $P_{\text{minimal}}$
- Hot reserve
- TETS
- VETs [hydroelectric power plants]
- Including
- Subdam
- Running water and daily averaging
- AETs
- Total ME
- Plant power generators
- Total for the country
- Import
- Total resources
- Export
- Country load
- Reserve in percent of  $P_{\text{max}}$

Table 9--Analysis of the VETs Rate for 1982

Таблица 9

Анализ на ролите на ВЕЦ за 1982 г.

(1) Показатели, MW	(2) Месяц												
		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
(3) Първок товар по време на максималния товар		1054	965	1036	809	938	594	642	642	1111	1213	1121	1087
(4) Първок товар на средния работен ден		897	856	913	790	617	479	539	560	794	1188	1063	911
(5) Средна мощност на ВЕЦ за месеца по време на $P_{max}$		1093	934	860	860	877	720	735	624	773	943	971	994
(6) Максимално участие по време на максималния товар		1370	1333	1199	1379	1415	1318	1028	731	1083	1194	1282	1396
(7) Участие в максималния товар в деня с $P_{max}$		1216	1333	932	1379	1267	552	888	546	783	1149	1267	1271
(8) Максимално участие в минимален товар		136	27	76	164	226	254	131	164	48	38	80	137
(9) Участие в минималния товар в деня с $P_{min}$		40	25	48	88	180	185	108	92	29	24	16	31

Key:

- |   |  |
|---|--|
| 1. Indicator, megawatts                                 | 6. Maximal participation during the maximal load period        |
| 2. Month  | 7. Participation in the maximal load of the day with $P_{max}$ |
| 3. Peak load during the time of the maximal load        | 8. Maximal participation in a minimal load                     |
| 4. Peak load per average work day                       | 9. Participation in a minimal load during the day of $P_{min}$ |
| 5. Average VETs capacity for the month during $P_{max}$ |  |

The system's VETs participated with 67.1 percent of their operational capacity in covering the minimal load, accounting for 53.6 percent of it.

The VETs participated covering the maximal load with 77.4 percent of their operational capacity, covering 16.4 percent of the total. The VETs participated with 1.6 percent of their operational capacity and covered 0.5 percent of the system's load in covering the minimal load on the day with a maximal annual load.

The Kozloduy AETs participated in covering the maximal annual load with 100 percent of its operational capacity--1,760 megawatts--and accounted for 22.8 percent of the systems load. The AETs participated with 91.2 percent of its operational capacity in covering the minimal load.

Plant generators participated in covering the maximal annual load with 72.3 percent of their operational capacity, accounting for 7.1 percent of the systems load and 68.2 percent of the minimal load, of which they covered 9.7 percent.

In 1982 the VETs worked mainly in the peak zone of the load rate. A study of the participation of VETs in covering the peak zone is based on the data on Table 9. The peak load during days with a maximal monthly load ranged from 594 (June) to 1,213 megawatts (July); the participation of the VETs during those days ranged from 546 (August) to 1,379 megawatts (April). The



Table 10--Analysis of the Kozloduy AETs system in 1982

Таблица 10

Анализ на режима на АЕЦ "Козлодуй" за 1982 г.

(1) Показатели, MW	(2) Месеци	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
(3) Максимально участие по време на максималния товар		1318	1308	1242	1059	1019	1589	1590	1519	1614	1724	1760	1780
(4) Участие в максималния товар в деня с $P_{max}$		1318	1252	1123	1049	601	1213	1590	1500	1207	1251	1760	1718
(5) Максимально участие в минималния товар		1323	1310	1232	1062	991	1530	1567	1520	1599	1701	1740	1738
(6) Участие в минималния товар в деня с $P_{min}$		865	1034	1082	888	700	940	1443	1233	1175	1020	1273	1626

Key:

1. Indicators, megawatt
2. Month
3. Maximal participation by time of maximal load
4. Participation in maximal load on the day with  $P_{max}$
5. Maximal participation in the minimal load
6. Participation in the minimal load on the day of  $P_{min}$

Table 11--Study of the System of Plant Generators in 1982

Таблица 11

Анализ на режима на заводските генератори за 1982 г.

(1) Показатели, MW	(2) Месеци	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
(3) Максимально участие по време на максималния товар		657	642	640	646	499	479	500	514	501	594	644	619
(4) Участие в максималния товар в деня с $P_{max}$		520	501	613	522	474	443	449	457	660	584	513	550
(5) Максимально участие в минималния товар		607	608	599	597	479	486	489	475	490	510	587	567
(6) Участие в минималния товар в деня с $P_{min}$		599	608	590	508	417	468	463	449	487	453	522	525

Key:

1. Indicators, megawatt
2. Month
3. Maximal participation by time of maximal load
4. Participation in maximal load on the day with  $P_{max}$
5. Maximal participation in the minimal load
6. Participation in the minimal load on the day of  $P_{min}$

conclusion is that during most months of the year the VETs covered entirely the peak zone of the load during the maximal load and some of the subpeak load, while during May, June, August, September and October other sources as well participated in covering it. The average monthly capacity of the VETs

during the maximal load was lower during the 4 months of the peak load for an average work day, changing from 624 (August) to 1,093 megawatts (January). Compared with 1981 the hydroelectric power plants participated during most months with a lesser median and absolute capacity. Their maximal participation during the maximal load changed from 731 (August) to 1,396 megawatts (December), whereas in 1981 no less than 1,094 megawatt participation was recorded. The maximal VETs participation during the minimal load changed from 27 (February) to 254 megawatts (June), and their participation on the minimal load day changed from 16 (November) to 185 megawatts (June). In both 1981 and 1982 June was the month during which the hydraulic power plants had their highest participation in covering maximal loads.

Within the entire year, the absolute and relative power generation by the VETs dropped, accounting for 7.5 percent of the country's electric power balance.

Table 10 shows data characterizing the work of the Kozloduy AETs in 1982. Until June the nuclear power plant worked with three units with a total installed capacity of 1,320 megawatts; the overall installed capacity rose to 1,760 megawatts following the commissioning of the fourth generator. Throughout the year the AETs worked within the main segment of the load rate. The trend during hours with minimal loads was for the AETs to generate more compared to hours of maximal loads, which continued in 1972 as well. Compared with 1981, when this occurred over a 9-month period, it occurred for a period of 4 months in 1982.

The maximal participation of the AETs during maximal daily loads changed within the range of 1,049 (May) and 1,780 megawatts (December). Its maximal participation during minimal loads ranged from 994 (May) to 1,738 megawatts (December).

The 1982 share of the AETs was 26.6 percent of the overall electric power production in the country, compared with 24.7 percent in 1981.

Table 11 contains data on the work of plant generators. Their maximal participation in covering maximal daily loads ranged from 479 (June) to 664 megawatts (November) with an overall installed capacity of 991 megawatts. Plant power generators participated in covering the maximal annual load with a total of 543 megawatts. In covering the minimal daily loads their maximal participation fluctuated from 475 (August) to 608 megawatts (February), compared to 454-608 megawatts in 1981.

In covering the load rate the plant generators developed essentially similar capacities as in covering maximal loads as well as covering minimal loads. Frequently in covering minimal loads their participation was higher. In 1982 as well plant generators operated at a rate similar to previous years. The trend of reduced participation during maximal loads continued. Compared to 1981 the output of plant generators declined by 0.7 percent.

The bar graph in Figure 6 shows the durability curve of the loads in their annual breakdown. The 50-megawatt interval load was chosen, and the duration

of the participation of the loads in the load diagrams within the system was shown in hours for each separate interval. The longest were the loads within the 4,415-4,465-megawatt interval--249 hours. This interval, together with the next two also form the highest overall duration--710 hours--or 8.1 per-cent of the duration of the loads for the entire year. As is to be expected, the shortest duration is that of the minimal loads of the system in the interval from 2,015 to 3,065 megawatts--3 hours--and the maximal, from 7,365 to 7,415 megawatts--2 hours.

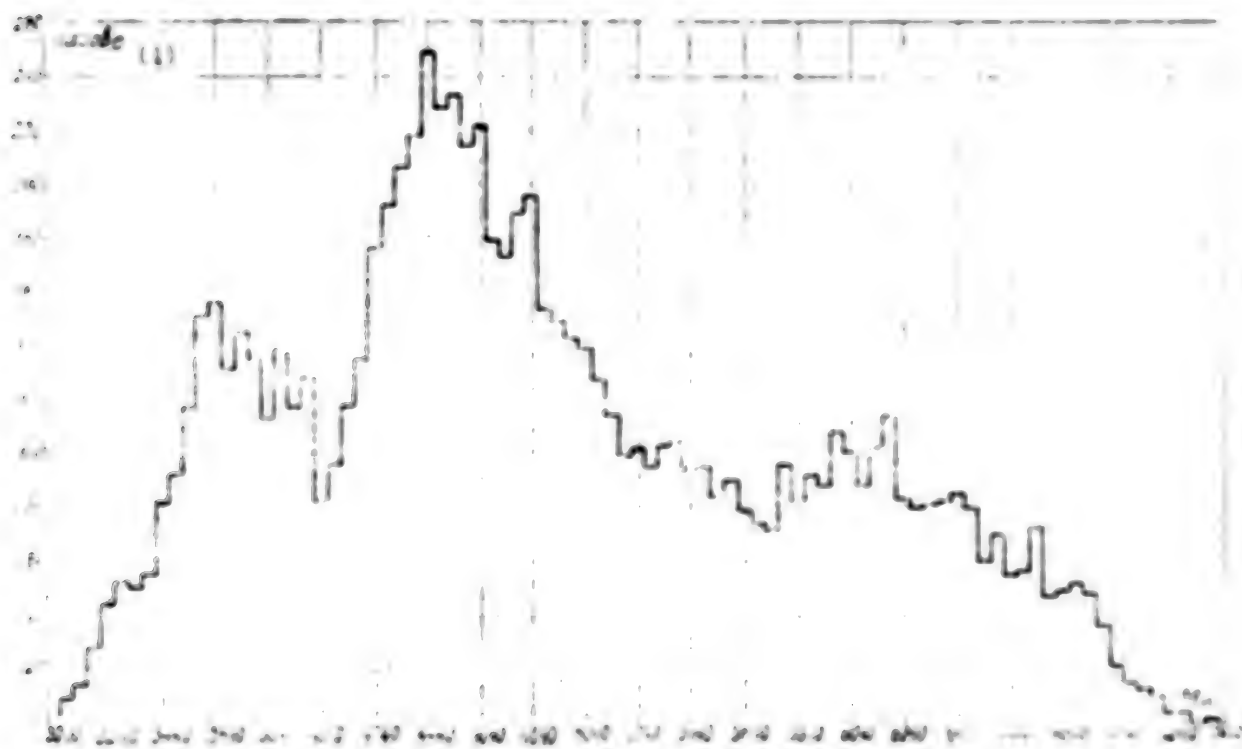


Fig. 6. Load duration curve for 1982.

Figure 6. Bar graph of the load duration curve for 1982

Key:

1. Hours

#### Conclusions

In 1982 the Bulgarian Electric Power System fulfilled its obligation of meeting the power needs of the country with the necessary quality and level of reliability. No restrictions on power consumption, which followed its natural course of development, were applied.

The positive long-term trend of condensing daily load rates of the electric power system is continuing. We note mainly increases in basic power consumption and basic loads. This is essentially due to the efforts made by the Ministry of Power Industry to regulate the load rate, the purpose of which is to limit capacity use during peak load times.

The following changes took place in the structure of the country's electric power balance in 1982:

The share of the electric power produced by the systems TETs of the Ministry of Power Supply in the overall power production in the country reached 54.6 percent compared to 53.5 percent in 1981. An increase of 1.1 percent compared with 1981 was reached;

The share of the Kozloduy AETs reached 26.6 percent of the overall electric power produced in the country, compared to 24.7 percent in 1981. An increase of 1.9 percent compared with the electric power produced in 1981 was reached;

The share of the power produced by plant generators dropped to 11.3 percent compared to 12.0 percent for 1981. The decrease was 0.7 percent;

The share of the electric power generated by the VETs declined; it was 7.5 percent in 1982 compared to 9.8 percent in 1981. The drop equaled 2.3 percent in the total power produced by the VETs which operated mainly during the peak zone of the load rate;

The share of imported electric power was 10.3 percent of the overall electric power consumed in the country. Compared with 1981 it declined by 0.8 percent.

The introduction of the summer daylight saving time had a certain influence on the work of the individual types of power plants and on the nature of the changed load rate of the power system during the summer.

5003

CSO: 2200/121

## STATISTICAL DATA ON INTERNATIONAL PASSENGER TRANSPORTATION

Sofia ZHELEZOPUTEN TRANSPORT in Bulgarian No 6, 1983 pp 12-15

[Article by Science Associates Dimitur Urumov and Penka Ivanova: "The Development of International Passenger Traffic in Bulgaria and the Involvement of Rail Transport in Providing This"]

[Text] The development of tourism in recent years has ranked Bulgaria among such established European countries in this area as France, Spain, Italy, Greece, Hungary and so forth. The favorable climatic conditions and the carrying out of the effective policy in the area of tourism have led to the establishing of this sector as one of the effective ones in the national economic system and as an important source of foreign exchange earnings for Bulgaria. Each year, Bulgaria is visited by several million tourists. Table 1 shows the number of foreigners who visited Bulgaria during the period of 1975-1981 as well as the citizens of our nation who visited other countries, depending upon the purpose of the voyage.

Over the entire period, the number of foreign tourists arriving in our country increased by 1,996,300 persons or by 49 percent, while the number of Bulgarians traveling abroad rose by 83,500 or 12 percent. In 1981 alone, Bulgaria was visited by 6,045,600 foreigners. Of the socialist nations, the largest number was Polish tourists with 22 percent of the number of tourists from the socialist countries followed by the number of tourists from the CSSR and USSR. Of the remaining countries, the largest number was Turkish tourists with 62 percent (including transit) of the number of tourists from the nonsocialist countries followed by Yugoslavia with 17 percent and so forth. In turn, Bulgarian tourists most often visited Romania with 41 percent of the visitors to socialist countries with the USSR responsible for 33 percent; of the remaining countries Yugoslavia was the highest with 22 percent. Conditionally, international travel can be divided into two basic groups: trips for business purposes and trips for private (tourist) purposes. Official or business trips are caused by such processes as the international division of labor, economic integration and so forth. The deepening of these processes has led to an increased number of business trips, but over the period of 1975-1981, these have increased more slowly in comparison with the increase in tourist exchange between Bulgaria and the remaining countries. Private trips in 1981 represented 84 percent of the total number of trips (not counting transit). The purpose of these trips was tourism, visiting, medical treatment and so forth. The transit trips are caused chiefly by the labor migration of the Turkish population to the countries of Central and Northern Europe.



Table 1

1 Страна в цел на посещението	2 Пристигнали чужденци и български граждани, посетили други страни, хил. души						
	1975	1976	1977	1978	1979	1980	1981
3 Страни — членки на СИВ							
4 — лични	1473,0	1384,7	1656,1	1868,4	1775,5	1764,9	1915,5
5 — служебни	283,2	272,5	294,1	325,4	324,2	331,8	344,5
6 — транзит	33,1	46,4	90,3	76,8	90,4	90,2	139,8
7 Всичко:	1789,3	1703,6	2040,5	2270,6	2192,1	2186,9	2399,8
8 Всички останали страни							
4 — лични	835,3	924,2	988,8	1299,5	1327,7	1303,2	1175,3
5 — служебни	176,1	198,1	197,0	213,5	217,3	223,0	234,1
6 — транзит	1923,9	1916,1	2088,3	1887,0	2034,3	2529,2	2995,1
7 Всичко:	2935,3	3038,4	3274,1	3400,0	3579,3	4056,4	4404,5
9 Общо всички страни							
4 — лични	2308,3	2308,9	2644,9	3167,9	3105,2	3068,1	3090,7
5 — служебни	459,3	470,6	491,1	538,9	541,5	554,8	578,6
6 — транзитни	1957,0	1962,5	2178,6	1963,8	2124,7	2619,4	3134,9
7 Всичко:	4724,6	4742,0	5314,6	5670,6	5771,4	6242,3	6804,3

Key: 1--Country and purpose of visit  
 2--Visiting foreigners and Bulgarian citizens visiting other countries, thousand persons  
 3--CEMA member nations  
 4--Private  
 5--Business  
 6--Transit  
 7--Total  
 8--All other countries  
 9--Total for all countries

The development of tourism is closely tied to the development of transport and more specifically to its physical plant, to organization and management, to the system of transport servicing and so forth. The unevenness in the time of the tourist trips has a substantial impact upon the quantitative and qualitative satisfying of the need for passenger traffic. The nature of the tourist visit for private purposes causes their sharply expressed monthly and quarterly unevenness. In 1981, the unevenness factors were: 2.84 for the monthly and 2.23 for the quarterly, with minimum deviations for the remaining years of the period. An analysis of the total number of trips made in 1981 (the same is valid for the remaining years as well) shows that 56 percent of them are made in the third quarter with around 44 percent in just the months of July and August.

The factors which have brought about an increased tourist and business exchange between Bulgaria and the other countries have caused an increased amount of passenger traffic while the development and modernizing of the individual elements of the physical plant of transport as well as the service system stimulate an increase in the amount of tourist traffic. Over the last 10-15 years,

the physical plant of motor vehicle and air transport have developed and as a result the traffic handled by these two types of transport has increased.

The international travel to and from Bulgaria during the 1975-1981 period according to the types of transport is shown in Table 2. From the given data it can be seen that the total amount of traffic during the 1975-1981 period rose by 40 percent or by 6.7 percent as an annual average. For the CEMA member nations this increase was 31 percent or 5.2 percent annually and for the remaining countries, 47 percent or 7.8 percent annually. Characteristic of international passenger traffic is the large amount of transit trips which in 1981 represented 29 percent of the total amount. Transit trips are made by rail transport with 14.5 percent of the total amount of transit in 1975 and 4.6 percent in 1981 as well as by motor transport with 85.5 percent in 1975 and 94.5 percent in 1981. Around 96 percent of the transit trips involving motor transport were made by private cars and chiefly involve Turkish citizens with 80 percent of the total number and by Yugoslav citizens with 7 percent.

The participation of the individual types of transport in handling international passenger traffic in 1975 and 1981 changed as follows: for rail transport from 19.2 percent to 14.4 percent; for air from 20.8 percent to 21.2 percent; for water from 1.8 to 1.2 percent; for motor vehicles from 58.2 percent to 63.2 percent. In bearing in mind that the larger share of the transit trips by motor transport is Turkish citizens employed in West Germany, a more realistic assessment of the involvement of the individual types of transport can be obtained if these are excluded in the comparison. Then the change in their involvement over the same period will be as follows: from 23.4 to 19 percent for rail; from 25.3 percent to 28 percent for air; from 2.1 percent to 2 percent for water; from 49.2 percent to 51 percent for motor transport.

Over the designated period of 1975-1981, the volume of international rail traffic to and from our nation and in transit constantly declined and in the following year had scarcely increased chiefly to and from the CEMA countries. This has been caused by a number of measures undertaken in these countries to restrict trips by motor transport. On the other hand, the measures carried out by the railroad administrations in these countries for an total improvement of services for international passenger traffic have been of decisive significance for increasing international rail travel within the socialist commonwealth.

The designated tendency for a decline in rail travel to and from the nonsocialist countries and transiting is a fact of negative significance. There are many factors involved in this but the main ones are:

- 1) The competing involvement of air transport in carrying passengers over a distance of 1,000 km. For European conditions, this type of transport is still without competition;
- 2) The development of private motor car use and a number of concessions which have been given to organized motor tourists;
- 3) The backwardness in the development of rail transport in the Balkan and Near Eastern countries.

Table 2

1 Вид транспорт	2 Международни пътнически превози, хил. души						
	1975	1976	1977	1978	1979	1980	1981
3 Превози между НРБ и страните-членки на СИВ							
4 — железопътен,	806,0	838,5	883,0	909,8	914,0	992,0	1339,2
5 в т. ч. транзит	15,0	20,0	24,4	25,5	28,0	40,3	35,5
6 — въздушен	780,0	712,6	823,5	990,5	1201,7	993,2	1084,5
7 — воден	123,2	76,2	104,6	129,5	93,8	78,0	94,0
8 — автомобилен,	1836,3	1733,5	2179,6	2436,4	2084,3	2273,2	2142,0
5 в т. ч. транзит	18,1	26,4	65,9	51,3	62,4	49,9	104,3
9 Всичко	3545,5	3360,8	3990,7	4466,2	4293,8	4283,6	4659,7
10 Превози между НРБ и останалите страни							
4 — железопътен,	636,0	539,5	439,0	367,6	399,4	265,6	172,4
5 в т. ч. транзит	268,0	223,0	168,6	111,5	94,0	132,9	103,0
6 — въздушен	778,0	803,5	596,3	607,0	801,1	1052,4	1138,6
7 — воден	8,4	8,4	35,2	30,6	35,4	8,6	35,9
8 — автомобилен,	2524,3	2809,3	3389,4	3907,8	3888,4	4255,0	4467,1
5 в т. ч. транзит	1655,9	1693,1	1919,7	1775,5	1940,3	2396,3	2892,1
9 Всичко	3946,7	4160,7	4459,9	4913,0	5124,3	5581,6	5814,0
11 Общ обем на превозите							
4 — железопътен,	1442,0	1378,0	1322,0	1274,4	1313,4	1264,8	1511,6
5 в т. ч. транзит	283,0	243,0	193,0	137,0	122,0	173,2	138,5
6 — въздушен	1558,0	1516,1	1419,8	1597,5	2002,8	1985,6	2223,1
7 — воден	131,6	84,6	139,8	160,1	129,2	86,6	129,9
8 — автомобилен,	4360,6	4542,8	5569,0	6344,2	5972,7	6528,2	6609,1
5 в т. ч. транзит	1674,0	1719,5	1985,6	1826,8	2002,7	2446,2	2996,4
9 Всичко	7492,2	7521,5	8450,6	9379,2	9418,1	9865,2	10473,7

Key: 1--Type of transport:  
 2--International passenger traffic, thousand persons  
 3--Traffic between Bulgaria and CEMA member nations  
 4--Rail  
 5--Including transit  
 6--Air  
 7--Water  
 8--Motor vehicle  
 9--Total  
 10--Traffic between Bulgaria and remaining countries  
 11--Total volume of traffic

Passenger traffic to and from our nation by air and motor transport has increased over the designated period. Air passenger travel in 1981 increased by 43 percent in comparison with 1975, and for motor transport by 51.5 percent. Passenger motor trips to and from our nation were largely made to and from neighboring countries (36 percent of this volume for Yugoslavia and Romania and around 30 percent for the transiting of Turkish citizens).

The absolute number of motor travelers between Bulgaria and several neighboring countries in 1981 was as follows:

- 1) 408,000 travelers between Bulgaria and Romania;
- 2) 575,000 travelers between Bulgaria and Yugoslavia;
- 3) 139,000 travelers between Bulgaria and Greece.

The amount of rail passenger travel between these countries is as follows:

- 1) 80,000 travelers between Bulgaria and Romania;
- 2) 36,000 between Bulgaria and Yugoslavia;
- 3) 26,000 between Bulgaria and Greece.

In bearing in mind that the basic passenger traffic both by motor vehicle and rail crosses the border crossings between Bulgaria and Greece and Bulgaria and Romania, we should study the reasons for the small amount of rail traffic.

A positive trend in the handling of international air passenger traffic is the involvement of our air transport. Around 67 percent of this traffic is handled by our aircraft.

The trend for a constant rise in business and tourist traffic between countries, including Bulgaria and other countries, will be maintained in the future. The basis for this is the ever-deepening processes of the international division of labor, particularly between the CEMA member countries. Also of great importance for increasing this traffic is the created favorable atmosphere of understanding and cooperation between the Balkan countries.

Due to the expanding facilities for recreation and tourism at the Bulgarian Black Sea resorts and the construction of new facilities for tourism and recreation during the winter season in our mountain resorts, additional opportunities will be created for increasing tourism and for reducing the unevenness of passenger traffic over the months and seasons.

The development of the transport infrastructure, including the Trans-European North-South Thruway under construction and the modernization of European railroads for high-speed travel will also help to increase tourist and transit traffic to and across Bulgaria.

The designated basic prerequisites for the development of international tourist and business travel provide grounds in the future to expect a significant increase in travel to Bulgaria as well as more transit trips. This presupposes additional demands on transport to carry out this travel. Bulgarian transport must create the necessary conditions for handling this traffic. At the same time, this will aid in increasing the Bulgarian international tourist and business travel. A number of technical, technological and organizational measures must be carried out which will assist in the complete and high-quality satisfying of the needs of international tourist and business travel.

Rail transport, as one of the basic types of transport used to carry travelers in international travel, in the future will also be involved in this transport process. In order to increase its involvement, it is essential to carry out effective measures which in their nature can arbitrarily be divided into two groups: measures related to the replacement, expansion and modernization of the physical plant and measures of a technological and organizational nature.

In the first group are the questions relating to:

- 1) Accelerating the reconstruction and modernization of the railroad track on the basic rail routes for higher speed train traffic and for reducing travel time;
- 2) Accelerating the replacement of the passenger car fleet in international service.

In the second group are:

- 1) Including cars for transporting passenger cars as part of the international passenger trains;
- 2) Improving trade services for the passengers in the stations and on the trains;
- 3) Improving the information services for passengers, introducing a train seat reservation system and creating an opportunity for linking it up with similar systems of foreign railroad administrations;
- 4) Together with certain foreign railroad administrations, studying the possibilities of handling unorganized tourists and business trips using train-taxi and train-bus systems;
- 5) Including luxury cars in trains traveling interesting routes in our country;
- 6) Improving the direct links between the Balkan countries.

The last measure must be carried out on a multilateral basis together with the tourist organizations and railroad administrations.

With the existing positive trends in the development of international passenger traffic, the carrying out of the designated measures in following years will lead to a further growth of their volume and to greater foreign exchange effectiveness for international rail passenger travel.

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10272

CSO: 2200/123

## REALITIES OF FOREIGN TRADE NOT FAMILIAR TO MANAGERS

Bratislava PRAVDA in Slovak 23 Jul 83 p 1

[Editorial: "Realities of Foreign Trade"]

[Text] When the Research Institute of the Financial and Credit System recently submitted to superior bodies the results of a survey directed to certain management problems, it emphasized in an attached commentary the continuing developments toward improvement. Particularly worthy of appreciation are continued efforts to understand the indicators in the Set of Measures more comprehensively, in broader contexts. At the same time, the commentary contains a finding which deserves some critical thought. We quote from it: "In the area of foreign economic relations, however, there is still evidence of obscurity and often even lack of uniformity."

If this simply called attention to an isolated case we could pass over it in silence. Except that the survey questions were answered by 240 employees from key staff subdivisions in 5 VHL [economic production units] in the SSR, 8 in the CSR and in 18 enterprises. The selection of respondents was, therefore, representative. The survey also revealed other noteworthy material, but let us stay only with problems of external economic relations. This is a subject which has already been discussed many times and also from the highest party and state platforms. Let us mention just one of the passages from the report of the Seventh Plenum of CPCZ Central Committee: "External economic relations, given the high degree of openness of our economy, predetermine the basic national balance of the plan, especially the creation and utilization of the national income. Therefore, fulfilling the tasks which were included in the plan in the area of external economic relations is to be given priority." The key element for us in this priority is cooperation with the Soviet Union. And as far as nonsocialist markets are concerned, there we must build up new positions and consolidate old ones.

This is a clear and precise directive which most obviously should be worked out specifically and in the greatest detail. The survey, however, ascertained just the opposite. Many managers replied even to questions in the area of their jurisdiction and relating to foreign trade with the words, "I don't know" or did not reply at all.

The extent of this ignorance is shocking, especially if we consider it in connection with information about the results of foreign trade this past year. We exceeded the plan for exports to socialist countries but in the direction of nonsocialist countries we remained unpleasantly well below the projected level. Since 36 percent of final sales of industrial organizations is designated for export, it could not fail to be without consequences: we did not import all that was on the list of requirements.

Of course the situation with nonsocialist markets is not easy. Trade is stagnating. Prices of various raw materials, materials and products which, until recently, we could rely on, have fallen. Demand for investment needs is declining. Competition has become keener. Discriminatory measures are more and more severe.

We could continue along this vein but even the sum total of the difficulties and problems does not give the right to insist that everything was done that should have been done and that, therefore, everyone can claim release from responsibility. We cannot allow ourselves this gesture; it would be worth Kcs 4.4 billion in prepaid prices which was lacking to fulfill the export plans last year.

Instead of complaining and referring to objective causes, we need to wrestle on the world markets, fight. We also need the words uttered by Comrade Gustav Husak, "...more healthy socialist spirit of enterprise. Enterprises are, after all, enterprises, so let them be enterprising in a socialist manner and not the authorities..."

We have the conditions suitable for us to do better on foreign markets and we do not need new investments each time and more manpower. These conditions are among easily mobilized unused potentials. Example? Let us go back and see how management personnel of the VHI subdivisions and enterprises expressed and revealed themselves in the above survey. Not only do they have minimal knowledge about the effects of external economic relations on their organizations. These problems, after all, affect their activities and interests only to a small degree. Hopes were also dashed that at least "financiers," representing the really appropriate profession, would be better informed (and more dynamic) but, unfortunately, almost 70 percent of those asked about foreign exchange did not know what to reply or said, "I don't know."

This is unbelievable, since the absolute majority of our enterprises are involved in export either directly or as subcontractors. It is unbelievable until we associate that "I don't know" with certain, at first glance, unnecessary losses on the world markets.

To help correct this, new provisions for closer association between production and foreign trade are being checked out at several VHI and enterprises. So far these are successful, but quite a bit of time will elapse before they are implemented throughout the national economy. Turning our attention to the priority in external economic relations, it is necessary to start right away wherever there was any vacillation!

Appropriate party organs and organizations should also think about the information and related facts which the survey revealed. How is it possible that so many management and supervisory personnel swear to the best relations with foreign trade but when it comes to a showdown they "don't know" or "don't understand"? And furthermore, on what level are the final interviews held at party training units--perhaps they are handing out "marks" too cheaply? After all, a casual attitude toward foreign trade betrays ignorance of the party's basic resolutions. For this reason too, party committees should study more carefully the style of work of their senior officials.

Nor are superior economic and general bodies particularly demanding in this regard. They tolerate technically obsolete products and often grant preferential pricing where there is no justification.

For enterprises to be enterprising, they must offer products that are efficient for the consumers. They should follow world price trends, recognize the needs of the national economy and world markets, have a general view of the competition and set the pace to match the top lead or remain on its level.

Every one of these and similar topics could be developed but we will again emphasize the main point: that the enterprises and V&A should start implementing everything mentioned above if they are not doing so already. For the sake of illustration, let us take one of the provisos for export, the need to be informed about the situation on world markets. It is figured that information already available saves 10 to 30 percent of development costs and above all, the most valuable thing--time. Opportunities for garnering this information are not to be left to chance. It is offered in technical literature, information at trade fairs and seminars is useful, nor should one pass up analysis of competitors' products. In short, one must "stalk" after anything that promises to advance the level of knowledge. That is how our phonograph industry, for instance, obtained a large and successful order. It seized on something that amateurs had found out and quickly developed their idea and the innovative product, even with their help, was offered where prospects of success were good.

Yes, we have enterprises which we can justifiably be proud of and also excellent organizers of production. But there are still plenty of those who live comfortably behind the walls of the factory entrusted to them. If anyone were to tell them that they are just resting in a chimney corner they would take exception to this. There is no sense in developing an argument on this subject when the lesson is quite clear: Everyone must have a sense of responsibility, increase his efforts and master whatever has to be mastered even though it cuts into his free time. Many, it is true, think that after 8 hours work, that is the end of it for them. Then let it be clear! No one can force a person to work beyond the legally set working hours but one has the right to ask that he have the full knowledge required by his position and be able to meet the demands

which cannot be enumerated to the last detail in his job description. Being informed is part of one's basic knowledge. From technical literature it is known, for example, that West German engineers are obliged to know about all the latest new technical and technological developments and they devote 2 to 3 hours a day of their free time seeking out this kind of information and reading. Why did we select an example from West Germany? Because many of our technicians look with respect at the commercially successful products coming from the West and compare them with ours. Yes, one must compare, and not only products but also where and how technicians, managers and supervisors must bestir themselves. Whoever wants to see need not look only abroad. Improvers, inventors and directors who want to boost their enterprises, designers of new machinery and scientists for the most part do not work only to the minimum extent required but far beyond that.

Some of the passages of today's article may perhaps sound too harsh. The reality, however, is even harsher and the rules that apply on world markets, especially nonsocialist ones, are based on it. There are no exceptions. And so it is quite right that directives are being most energetically promulgated here, too, and their success or failure will be reliably seen in the results of our export trade.

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CSO: 2400/390



## MAGNESITE INDUSTRY EXPORT POTENTIAL DISCUSSED

Bratislava PRAVDA in Slovak 20 Jul 83 p 1

[Editorial: "Opportunities in Magnesite Industry"]

[Text] Magnesite is our one material which, after processing into building materials for the metallurgical and cement industries, could be exported on a large scale. So far, however, we are not making sufficient use of this possibility. The current annual production of magnesite products represents Kcs 1.9 billion even though it is actually possible to increase production to Kcs 3.2 billion. What, then, is standing in the way of expanding the magnesite industry?

Right at the start let us say that there is a great deal of caution around this branch which is due to the fact that in recent years the world production of steel has fluctuated greatly. It is expected that the consumption of steel will no longer increase much. On the other hand, the processing of steel has been modernized, in particular its production in oxygen converters calls for new kinds of fireproof materials. Demand has risen for higher quality and longer lasting masonry materials. This means that the consumption of fire-resistant materials will decrease in the future, but their cost, in view of their longer life, will increase. The Slovak Magnesite Plants in Koseice are currently facing two possibilities: They can either maintain their present level of processing magnesite raw materials and be content with their role as exporter of semifinished products--magnesite clinker, or invest in the development of a magnesite industry and produce much higher quality fire-resistant building materials, not only for our metallurgical industry, but also for export. There is no third way.

If we agree to the first alternative it would mean importing annually a considerable quantity of fireproof materials for our metallurgical industry, especially from Austria and the FRG. The purchase costs would practically swallow up all the funds obtained by selling magnesite raw materials to capitalist countries, which represents approximately Kcs 180 million in foreign exchange. In such a situation, however, the other socialist countries would also be affected, since they would have to buy building materials, especially for steel plants, in dollar areas. To invest or not to invest is thus not a question for Czechoslovakia alone but involves all the CEMA countries.

If we were to remain at our current technical level, gradually even our present export opportunities would become limited. A few years ago we were still exporting almost 40,000 tons annually of steelmaking clinker to nonsocialist countries. This year we have a problem selling 24,000 tons. We recorded the same decline in the sale of basic building materials; in the 1970s, about 17,000 tons of them were exported by the magnesite workers, this year only 9,000 tons are expected to be exported. On the other hand, there is increasing interest in cleaner clinker. In the last 2 years, for example, the sale of brickmaking clinker increased from 25,000 to 30,000 tons. Furthermore, according to statements of workers of the Slovak Magnesite Plants in Kosice, we could have sold a lot more if our magnesite plants had the capacity.

We must realize that competition in the world is getting keener all the time--Austria, Yugoslavia, and even China, are flooding the market with quantities of magnesite products and the FRG is also a serious rival, even though it does not have its own raw material resources but has to buy them, including even from us. It is precisely the FRG example that shows that it pays to invest in upgrading magnesite raw materials. What, then in essence, does this involve?

The present technical facilities in our magnesite plants could permit processing of magnesite raw materials only through physical modification. New requirements for purity of magnesite, however, call for developing the technology for processing raw material by chemical means. In the technological process, the structure of the raw material is literally changed in order to attain its optimal fire resistance and this can be done only by chemical processing. In this way, for example, pointing material can be produced for the repair of furnace assemblies while hot, without interrupting operations, and also other materials and building materials in demand can be produced.

In this connection, the magnesite workers are often asked whether they are at all prepared for this kind of production? The answer is definitely yes. They are, in fact, demonstrating this under the present difficult conditions when they often struggle to produce materials with their primitive equipment which metallurgists purchase abroad for hard currency. One of these materials is smelted magnesite necessary for repairing steel-making furnaces. In order to reduce our imports as much as possible, the magnesite workers in SMZ [Slovak Magnesite Plants] Lovinobana erected an electric furnace in which they produced the first 650 tons of smelted magnesite mass last year. They want to produce up to 1,000 tons of smelted material annually under semioperational conditions. Of course, our national economy uses 3,000 tons annually, not to mention the fact that materials of smelted magnesite would be exceptional export items and also basic materials for the production of spinel building materials. The magnesite workers also showed their technological aptitude for high-quality production in the case of basic building materials. Metallurgical workers in the East Slovak Ironworks were until recently dependent on the import of retracting locks--gate valves used in casting.

For a gate valve of scarcely 40 kilograms which withstands only three testings, they had to pay 490 West German marks. So the magnesite workers, in cooperation with the Metallurgical Institute for Refractory Materials in Bratislava, are developing gate valves which are produced largely from domestic raw materials with only a small amount of special imported clinker. The first 50 gate valves are being tested this month under production conditions.

The magnesite workers gave foundry and cement workers several such products. Often times their initiative brings up the question as to why this form of innovation is not used to take care of other refractory materials in short supply. In this case, however, it would not make sense. For example, the gate valve mentioned above is pressed in Lovinobana, filed in Kosice, fired and polished at the East Slovak Ironworks, everywhere under makeshift conditions.

During a recent discussion of this problem the CPCZ Central Committee at a seminar of specialists clearly came out in support of the alternative of developing the magnesite industry so we would be able to produce at the proper technical level the kinds of fire-resistant and building materials in demand, not only for our domestic use but also for export.

Further developments thus depend on the building of more modern production capacities. In first place, is the liquidation of the old plant at Kosice, the existence of which is unbelievable today, from the viewpoint of the life environment, and the construction of a new plant on the Bociar. The Kosice magnesite deposit is one of the best in Europe. Improved processing technology will permit the production of brickmaking clinker with a purity of up to 92 percent. At present, the clinker is only 86 percent pure but nevertheless is greatly in demand and also a profitable magnesite material for export. The long-range development concept for the magnesite industry up to the year 2000 originally planned on a yearly capacity of only 50,000 tons of brickmaking clinker. However, the residuum of the East Slovak Kraj Committee of the CPSL is of the opinion that the Kosice plant ought to produce up to 150,000 tons annually. That means that we could offer 100,000 tons of brickmaking clinker to the CEMA countries. So far the Soviet Union has responded affirmatively. The views of the other CEMA countries are awaited. Even for this high an annual extraction, the Kosice plant has geologically proven reserves to last up to 100 years. In this connection, it was surely not by chance that the report of the Eighty Plenum of the CPCZ Central Committee emphasized that carrying out the integration processes will make it possible to resolutely and systematically increase the strength of all countries of the socialist community, make efficient use of their natural resources, their productive and R&D potential to benefit the people, consolidate their forces and increase the influence of the socialist system on world developments.

Another plant on which to concentrate further development of the magnesite industry is Hacava. In the existing plant, they are planning to build a shop for the production of nonferrous clinker with a purity of up to 99.5 percent which we are currently buying abroad. In this case we would be taking over an already tested technology from the FRG, also making it possible to process magnesite scrap and flue dust. The processing technology here is entirely chemical and the semifinished products obtained make it possible to produce high-quality building materials and specialized repair substances. For this purpose they plan to build a special ceramics shop at the plant in Lovinobana.

These three projects--Kosice, Hacava and Lovinobana--will require expenditures of over Kcs 1.3 billion. That is, indeed, a tidy sum. However, in discussions up to now--especially with our Soviet partner--they are urging us to consider building the new production capacities partly also with CEMA resources. In this way all would gain. Not a single CEMA country would have to spend dollars hereafter to buy basic fire-resistant materials for their metallurgical and cement industries. This, then, is an opportunity we definitely should not miss.

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CSO: 2400/390

## CEMA DELIVERY OF AGRICULTURAL EQUIPMENT CONTINUES UNRELIABLE

Budapest MUSZAKI ELET in Hungarian 4 Aug 83 p 2

[Summary] According to fairly reliable estimates, Hungarian agriculture currently uses 760,000 pieces of agricultural equipment of 1,500 kinds. Its total value is in excess of 100 million forints. A graduate mechanical engineer directs the use of machinery worth over 35 million forints. He has no easy job: 40 percent of the tractor part has been depreciated to zero. Acquisition of new machinery runs into a number of obstacles. With the exception of the equipment produced by the Raba Factory, most tractors and combines are socialist imports. Despite the good intentions of the suppliers, their readiness to deliver leaves much to be desired. For example, only 2,800 of the requested 4,200 Soviet MTZ tractors were contractually confirmed. Consequently, only 40 percent of the farms' demand for 7,000 such tractors can be satisfied. In 1983, a total of 70 Soviet T-1000 caterpillar tread tractors will be available, meeting only one-quarter of domestic demand. The Czechoslovak partners are also lagging in deliveries: requestors will receive only two-thirds as many Zetor tractors as they need. Greater or lesser shortages are expected of the SKPV-200 machine for harvesting fibrous fodder, the E 281 self-propelled chaff cutter made in the GDR and the potato planters sold on the CEMA markets.

On the other hand, it is fortunate that domestic production of agricultural equipment which meets 40 percent of local demand is continuously expanding and increasing selection through purchase of licenses. The readiness and ability of capitalist partners to deliver is unexceptional. However, their products may be purchased only if the necessary equipment is unavailable in Hungary or on CEMA markets or if improvement of Hungarian production technology requires them.

Price is the second great obstacle to expansion of the agricultural machine park. During the first quarter of 1982, trade in agricultural machinery was 91.5 percent of that of same period in 1982. The impulse to buy was curbed by higher prices and possibly by fear of stricter economic regulators. Thus many farms instead of buying essentials ordered useful but less essential equipment such as tractor-drawn trailers rather than IFA trucks. More and more farms are cancelling all or most of their orders for the year.



The meeting called to discuss these matters could not argue with price calculations for domestic and foreign equipment nor could it intervene in the formulation of economic regulators established by the authorities. However, it did find that farms are unable to purchase many machines required for upping production, and this will lead to a reduction in the hectareage devoted to certain crops and ultimately to a decline in over-all yields.

Although one solution to these problems is the leasing of equipment, actually implemented with initial success by the two largest agricultural production systems, the competition was so great that costs became prohibitive. Furthermore, only farms which could pay the substantial fee required for joining the Equipment Leasing Association were able to benefit from this idea.

Fortunately, the shortage of parts is decreasing annually as more and more farms begin operating their own spare parts shops. Parts are also being produced by special enterprises assigned this task by the Mezogeptroszt /Agricultural Machine Trust/. Commerce is now trying to discover a way of using its own development funds to purchase special machine tools for producing parts.

CSO: 2500/406

NEW DIRECTOR OF UNITED INCANDESCENT TELLS OF PROBLEMS, PLANS

Budapest HETI VILAGGAZDASAG in Hungarian 30 Jul 83 pp 36-38

[Interview with Karoly Demeter, managing director of United Incandescent, by HETI VILAGGAZDASAG staff member Agnes Tibor; date and place not given]

[Text] United Incandescent finished last year in the red, although in 1980 it still appeared capable of standing up with its own resources. This year it received a new managing director, the now 50-year-old Karoly Demeter, who came to the factory in 1957 as a physicist in the capacity of a developer; and after 1977 he was the general deputy of the managing director. We sought information from him about the causes of the failure and the present course of development.

[Question] Let me start with a personal question! In the past 5 and 1/2 years--through the period of failures--you were the deputy managing director. And still the Ministry of Industry found you suitable to lead the enterprise. Why do you think it did, and how did you receive the decision?

[Demeter] I do not think I am the right person to answer why I was the one selected. I never wanted to be a managing director. But neither did I want to be deputy managing director; I was a happy developer who achieved successes in the field. And yet I regard my present task--although it is a difficult one--as something I can do. If I did not think so, I would not have accepted the position. I am convinced that United Incandescent is a good enterprise, and we shall prove this.

[Question] There is plenty to prove for in 1979 United Incandescent belonged among the inefficiently managing enterprises...

[Demeter] This is not surprising at all. In the past 20 years the world's large enterprises, almost without exception, have reached the point where they need reorganization, financial injections and new leadership.

[Question] Let us stick to United Incandescent! What caused the problems here?

[Demeter] The problems can be divided into three groups. First of all enterprise production developed extremely fast although we lacked sufficient finances. For example, we increased capitalist export from an approximate

annual average of \$23 million in 1970 to \$50 million in 1975 and to \$100 million in 1980. But we did all this with credit. We even took credit for working assets, and in the meantime interest rates rose sharply also in Hungary. It was possible to see, of course, that this represented a growing problem, but it was not possible to foresee that by the end of the 1970's the world economic situation would deteriorate so rapidly, and all those who had invested--moreover with credit--would be in a disadvantageous position. I must add that under the Fourth and Fifth Five-Year plans we were encouraged to increase exports even at the cost of credit loans.

[Question] And the other two causes?

[Demeter] Expansion of the production profile accompanied production increase. Under the Third and Fourth Five-Year Plans a number of smaller Budapest and provincial factories came under United Incandescent's control. In 1965 the enterprise had five smaller sites, and in 1974 16 larger and more than a dozen smaller ones. At these sites large investments were undertaken which were accompanied by more problems than could have been anticipated. Let me mention only one of these--the training of workers. Today it is clear that this expansion was too fast, and the enterprise could not manage with resources and energy.

[Question] What compelled United Incandescent to extend its operations?

[Demeter] Externally, no one. But do not forget that there were serious manpower problems in the capital city, and in the provinces United Incandescent was invited to and expected in many places; we could not say no. And also, for a while exports could be increased rapidly. The problems arose when in order to keep up with competition we had to modernize production at these sites.

[Question] And the third cause?

[Demeter] Management and organization of the enterprises lagged behind material development. The organizational form and the activity-regulation relational system which the sudden expansion would have called for, did not develop. Activities which should clearly have been decentralized were managed centrally. Investments, for example, were not only centrally organized, but implementation was also commanded from the center. In this way no relationship developed between the center and the local factory management which would have resulted in a more purposeful and economic solution. Production management resembled the system of central play direction; we directed--with nonmarket indexes--how much the factories should produce of a given product. Naturally, the factories were not interested in profit. Difficulties with foreign sales coincided unfortunately with all these problems. For United Incandescent this is a particularly big problem: it exports 80 percent of our products. It was evident in 1978-1979 that we would not be able to finish the investment we had started in the current five-year plan, although in 1979 our profit came to 117 million forints. It was primarily for this reason that in 1980 the case of the enterprise came before the State Planning Committee.

[Question] At the end of 1982 repayment was suspended in credit amounting to more than 2 billion forints. As was evident from your 1980 statement, United Incandescent judged the prospects too optimistically. You said that in 1981-1982 the investment would be ready, production value would double by 1985, and capitalist exports would increase by one and one-half, and ruble exports by 40 percent. But United Incandescent finished last year with a deficit of 523 million forints, its total credit debt is greater than the net value of its fixed assets, and the interest debt alone comes to 1 billion forints. What kind of error slipped into the calculations?

[Demeter] In accordance with the plans, the enterprise closed the year 1980 with a modest profit increase, but in 1981 we were no longer on this course. The Management became overconfident and we regarded the preceding years as minor deviations. We did not cut production costs, we did not realize the notions regarding profit increase for the improvement of planning, and we did not continue changes that had been started in the field of production management. Efforts at successful results became lax, problems appeared on the capitalist markets. The enterprise was not inclined to take note of this, it forced capitalist exports, and in this way it was compelled to reduce prices.

[Question] In July there was again a vote of confidence in United Incandescent: a credit debt of 1 billion forints was cancelled, and the repayment of 4 billion was rescheduled. Moreover, a part of this may be repaid from untaxed profit. As a one-time working asset allocation, the enterprise received 850 million forints. To the average man a subsidy like this seems to be a tremendous financial injection. What is your view?

[Demeter] In this case a basic analysis prepared with the participation of outside experts preceded this assistance which was calculated on precision scales, but which, I believe must be enough.

[Question] In recent years United Incandescent has been released from responsibility for several factories of higher organs. In 1981 they detached the Pecs Sopianae, the Nagykanizsa Machine Factory, the Aron Gabor Iron Foundry, and this year the Gyongyos Semiconductor and Machine Factory. Does this ease the situation of United Incandescent or make it more difficult?

[Demeter] This is difficult to evaluate. The detaching of the first three factories may be helpful to the enterprise. In any event, this has simplified management and released the enterprise from activities which did not belong closely to the basic activity. Where it appeared necessary to our enterprise, we came up with contractual relations, and this appears to be an appropriate form. The Semiconductor and Machine Factory was annexed to the Microelectronic Enterprise in the interest of realizing the microelectronic program. This step, which is necessary from the national economic point of view, was rather painful for us. Not only because we like microelectronics but also because the Gyongyos plant was our most profitable one. Most of the profit was brought by machine production, but this too was detached from us along with its semiconductor production. It is a fact, however, that we have established close cooperation with the Gyongyos factory since the separation.

[Question] There is hardly another Hungarian enterprise which has so many foreign interests as United Incandescent. I understand that it has nine commercial representations and four foreign, mixed producer enterprises. As we hear, these cause many problems. I understand that the termination of the Pakistan and Irish producer enterprises is under discussion.

[Demeter] It is a fact that we were not circumspect enough when we established our foreign enterprises. I would like to be silent now about the Pakistan factory, but when we see that in the final analysis we established the bases of our Pakistan exports by this means, we accept the problems with greater patience. I believe that it is worth maintaining the enterprise there. The situation is different with the Tungfram-Ireland producer enterprise. Here we committed a number of errors. We chose the worst possible time for establishing the enterprise, the year before the dead point of the world economic recession. The investment was too great, our hopes too sanguine, we did not include all the exports in the planning work and we did not survey the market well. The fate of Tungfram-Ireland is still pending. Of course, this does not mean that we will not establish other enterprises abroad, only that we will have to proceed more circumspectly.

[Question] You have again worked out ambitious stabilization plans at the enterprise. As compared to 1982, you want to increase production 36 percent by 1985, and another 82 percent between 1985 and 1990. You are also planning to wipe out the deficit this year. For 1985 you have called for sales revenue of 7.3 billion forints, 4.9 billion forints' worth of exports in convertible account and 2.3 billion forints' worth in ruble account. As you conceive it, by 1990 you will be able to devote 1.5 billion forints to investments. Meanwhile you will reduce the work force from the present 24,000 workers to 20,000 by 1990, including a reduction of 2,000 by 1985. Such a program can only be prepared by an enterprise which knows it has great internal reserves. What are the reserves of United Incandescent?

[Demeter] Above all, we have reserves in management and in organization modernization. We know with complete certainty, for example, that we have to eliminate a whole series of central assignments. By September 30 we have to make recommendations for organizational and perhaps personnel changes, the recently appointed three new deputy managing directors and the two old ones. On 1 January we already started the decentralization of enterprise activity. We are planning to finish this by year's end. Only financial matters, research and development and trade will remain in central hands. We will create an accounting system which will make it possible for the factories of United Incandescent to exchange their products by value. Factory managers will be interested in profit. Three-fifths of their bonus, which corresponds to 30 percent of their basic pay, will depend this year on the fulfillment of the factory profit plan. Until the end of 1985 we can in practice operate only with the present means, and the product structure cannot be substantially changed. But until then we want to prepare ourselves to manufacture new machinery under the Seventh Five-Year Plan--precision mechanical products, computer spare parts, oscilloscope tubes, monitor tubes, microprocessor simulators.



Total United Incandescent Sales 1970-1985\*

	Sales Revenue	Of this:	
		for dollars in billion forints	for rubles
1970	3.4	0.9	1.0
1975	6.2	2.0	2.0
1980	8.8	3.5	2.1
1983 (plan)	8.6	4.3	2.1
1985 (plan)	9.3	4.9	2.3
*1985 = plan			

Tungsrn Chronology

- 1862 Bela Bernath Egger, 8 years after Edison's invention, begins the manufacture of carbon filament incandescent lamps in Hungary.
- 1869 The Electric Incandescent Lamp Company is founded with a basic capital of 400,000 forints.
- 1889 The Egger Brothers, the Pest Hungarian Commercial Bank and the Niederosterreichische Escompte Gesellschaft establishes the United Incandescent Electricity Company. In that year they manufacture 163,000 units of carbon filament incandescent lamps.
- 1903 On the basis of a patent by Sander Juszt and Ferenc Hanamann experimental manufacture of tungsten lamps is begun. In 1903, 4.5 million carbon filament incandescent lamps are manufactured.
- 1909 The Tungsrn trade mark is registered.
- 1914 5.7 million tungsten lamps are manufactured.
- 1916 The first experimental vacuum tubes are made in the factory.
- 1921 More than 8 million lamps are manufactured, 80 percent are exported.
- 1930 United Incandescent puts under patent protection Imre Brody's invention, the crypton lamp.
- 1931 Pal Tury and Tivadar Millner register their patent for the large crystal tungsten filament.
- 1937 Fluorescent lamp manufacture and experimental high pressure mercury vapor lamps are started, and the first Hungarian television laboratory is established.
- 1943 25.68 million incandescent lamps and 2.055 million vacuum tubes are manufactured.
- 1948 Manufacture of fluorescent lamps is begun.

- 1950    Manufacture of microwave vacuum tubes, TV picture tubes, and cathode ray tubes is begun.
- 1957    United Incandescent regains its independent export rights.
- 1965    Production value is 1.8 billion forints.

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CS0: 2500/400

PLANNING COMMISSION MEETING FOCUSES ON NATURAL GAS, TIRE SUPPLY PROBLEMS

Warsaw TRYBUNA LUDA in Polish 19 Aug 83 p 2

[PAP report]

[Text] On 18 August the topic of maintaining the flow of natural gas supplies in the economy during the period 1985-1990 was one of the items on the agenda at a meeting of the Presidium of the Planning Commission under the Council of Ministers.

It was pointed out that the growing demand for natural gas can be met by relying on increased deliveries from the Soviet Union that would be offset by deliveries from the Polish side of certain manufactured goods and commodities as well as by Polish participation in construction projects in the USSR. Proposals covering these kinds of projects will be drawn up during the next round of studies on the 1986-1990 plan.

The Planning Commission Presidium also examined problems associated with meeting demand in the economy for rubber tires. Distribution problems, reduced working hours, and the labor shortage in the tire manufacturing industry coupled with the simultaneous upsurge in demand have combined to create a situation in which, the increase in the output of tires notwithstanding, the economy has continued to suffer for a long time now from major shortages in this product line. Decisions made over the past few months by the chairman of the Planning Commission have provided some temporary relief from the shortage of certain types of tires. The expected fulfillment of targets written into this year's plan and the projected growth in the industry's output over the period 1984-1985 should help to alleviate shortages of this product line.

A suitable distribution management policy is bound to help see to it that tires are used in a more efficient manner. The point here is that tires should be allocated first and foremost to those enterprises which not only are involved in meeting the most important needs of society, but also do a good job of managing their motor transport fleets. Greater consideration must be given to meeting needs associated with making provisions for the operation of existing inventories of machinery and motor vehicles. It should be expected also, depending on specific circumstances in individual cases, that producers will make their own arrangements to procure the tires they need using funds earned from extra export sales.

Efforts geared toward upgrading the quality of the tires that are being manufactured will also have an impact on the process of keeping the economy adequately stocked with these products. It is also expected that there will be a further expansion of the production of radial tires, especially radial tires for trucks.

It was concluded that many other steps will have to be taken in order to meet needs in the area of transportation services. A very important objective in this regard is making provision for the more efficient utilization of all kinds of transportation vehicles.

CSO: 2600/1234

## INSTITUTIONAL BARRIERS TO TECHNOLOGICAL PROGRESS EXAMINED

Warsaw POLITYKA in Polish No 27, 2 Jul 83 pp 1, 10

[Article by Jan Szcepanski: "Technology And Society: The Barriers To Progress"]

[Excerpts] Historical analyses prove that, in all past societies, a definite demand emerged for tools, machinery and technical equipment. Groups existed which created new technology, and groups and institutions which supported the development of new technology which sparked off phenomena and processes that transformed these societies. What is the present situation in this regard in Poland?

Modern technology emerged as the driving force behind capitalist economies and armed forces. Since the first industrial revolution, which took place in the second half of the 18th century, these two factors have remained active in capitalist societies. Technology is primarily developed for profit and in order to gain military superiority. There exist specialized professional groups engaged in creating new technologies and specialized research-and-development institutions, the most important of which are connected either with the economy or with the armed forces; typically, they form a single industrial-military complex. Of course, one cannot ignore the role of scientific research for purely scientific, cognitive aims; often, these run far ahead of the needs of economy and the army.

With a certain amount of generalization, it may be said that demand for tools, machinery and equipment is generated by society, and these needs appear in the economy, first of all in industry, construction, transportation and services, but also in households, entertainment and, to a different extent, in other areas of group activity, especially in communications and various cultural fields. There also emerge groups which can satisfy this demand, which develop technology and, in doing so, earn money. Therefore let us see how things stand in this respect in the Polish economy—who is interested in the development of technology and in what way, who cares about technological applications, whose interests are threatened by such development and what are those interests, etc. To put it plainly, why is the state of technological advancement in Poland such a long way from a desired state, despite the fact that there are institutions that train large numbers of specialists in technology, despite a large number of research and development centers, despite a large industrial sector and an existence of a strong demand for modern technology?



For a start, let me briefly characterize Poland's economy. This kind of socialist economy is a political creation, built after the takeover of political power by the party, and the existence of this authority is the essential condition for this system's existence. As a result, economic decisions are subordinated to political ones. Within the socialized economy itself, the initiative rests with central bodies in charge of planning, government and management. In the private sector, decisions concerning production, both on the part of private farmers and owners of small businesses, are influenced through state contracts, pricing policies, taxes, allocation of materials, procurement, etc. Which groups and institutions belonging to that system are interested in the development of technology and in what way?

First of all, let us examine material interests, i.e., the pursuit of profit as a factor encouraging technological development, and let us see what profit can be derived from such development by executives and staff of central organs of planning, government and management. In my opinion, these material profits are negligible in this case. Another motivation for promoting technological development is an official duty imposed on them by appropriate regulations. However, this motivation turned out to be unsatisfactory, and it would be extremely interesting to determine why the decisions of the 1969 4th Plenum of the PZPR CC regarding technological progress were not implemented--despite the fact that they were very apt and based on excellently prepared documents--and why the same thing happened with many other resolutions passed by party authorities or government institutions. This is how the mechanism of formalized organizations operates; the principle of being responsible for actual effects was replaced by responsibility for observing the rules. The matter is clear--any audit or inspection, at any level, including the Supreme Chamber of Control, concentrates on the observance or violation of regulations, not on substantive results of activity. As a result, it was also possible to discharge of the duty of attending to technological development by issuing appropriate recommendations or by engaging in other formalistic actions. At any rate, the lack of results in achieving technological progress was not a fundamental obstacle to promotion within economic organizations, while genuine accomplishments did not in themselves guarantee a climb up the career ladder.

An analysis of the relationship between economic administration and research-and-development institutions illuminates possibilities for Poland's technological development. I am not going to repeat results of studies into this problem contained in such books as Andrzej Gniazdowski's "Research and Applications" [1977] or Kazimierz Poznanski's "Application of Research Results in Industry" [1982]; these books clearly demonstrate that, strictly speaking, nobody in the Polish economy stands to profit by technological progress.

What does this look like at the enterprise level? It is hard to predict what impact the reform will have on the planning, management and administration divisions of an enterprise, what the relationship between the management and workforce will be, and what motivational and economic mechanisms are going to determine the shape of production processes. However, judging by practice to date and the role of the enterprise in the national economy, it is possible to pin-point the main obstacles to the introduction of technological novelties. One is that production quotas are so high that there is little room to maneuver, the other is that wages and bonuses are determined by the fulfillment of the

quotas. In this situation, enterprises have committed all their potential, all manpower and machines, all funds and working hours to ensure the implementation of the plan.

Any technological innovation that required some experimentation in the introductory phase was pushed aside because there was no labor, machines, hours or funds available, and, on top of that, it could threaten the plan's implementation, thereby threatening paychecks. In this way the economic mechanism, presented here in a grotesquely oversimplified manner, acted against the introduction of new technological solutions.

As for the creation of new technology, it can be shown how methods of planning and of using the knowledge and talent of the staff of research-and-development institutions were responsible for wasted efforts and talents, through a formalistic approach to research projects, through limiting studies to relatively simple production tasks, or through tying industrial research to academic degrees that are important for universities but not for industry.

The development of the creation and application of new technology was also slowed down by peculiar psychological and sociological phenomena, such as the fear of innovation, the fear of taking risks, the threat to one's own position posed by technological novelties, or the threat to personal profits.

These are simple phenomena and they have been analyzed in detail. Any technological novelty creates new social and political situations in which there may be no room for all the people who occupied executive positions so far. New technology requires new organization of work.

However, the organization of work is introduced and guarded by regulations, and the new technology is too weak to change the regulations governing the mode of work; as a result, it simply gets strangled. However, if the new technology does manage to lead to a change in work organization, personnel changes follow. Therefore new technology poses a threat to the social position of at least some industry executives. But personnel changes are most often unrelated to performance, so the old people who do not understand the need for new technology remain and may suppress the new technology. There are also economic mechanisms for suppressing technological innovation.

One of them is the emphasis on performance measured in tons, rewarding the weight of motors, steel structures or concrete beams. Any attempt to diminish that weight is an irrational activity detrimental to employees whose bonuses can thus be cut.[...]

What role can technology play in pulling Poland out of its economic crisis? Technology works when somebody uses it, applies it in a sensible manner, utilizes its potential for solving economic problems in production, transportation, construction or services. What determines the development and application of technology in the Polish economy? The economy is a complex whole that incorporates political and ideological factors, economic mechanisms such as wages, prices, taxes, credits, employment. There are also technical factors--tools, machines, means of transportation, energy sources, etc. Finally, there

is the social factor, i.e., people, relations, institutions, factory crews, hierarchy of posts, decisions, authority and prestige, and this human layer is the driving force in the economy, the force that determines the operation of the ideological and political model, the technical systems and economic mechanisms. A reform of the economic mechanism itself, not improvements in the technical system alone, will not produce the desired effects. This is not to say that there is no need to modernize technology; it merely means that technology in itself is not the driving force behind the economy.

What does the economy expect of technologists today? This has remained the same since the days of the 6-Year Plan [1950-1955]: the elimination of waste of materials, time and labor, and lower consumption of materials and energy in the entire economy. Unless this problem is solved, no reform will cure an economy that squanders as much as the Polish economy does. Other targets are to improve transportation both within factories and on a national scale, to devise equipment that will make it possible to unload freight cars without damaging them in the process, to devise work organization schemes that would make it possible to make optimum use of industry's technological equipment, to reduce the weight of structures, to lower energy consumption, etc.

Why haven't these problems been solved? My theory is simple. The economy as a whole is not a system, it is a drama, which means that what has to be solved in the first place is not so much the technical as the human problems, i.e., the selection and training of executives, the principle of responsibility, the mechanisms of motivation and initiative, in brief, problems that have waited to be solved in Poland since the 18th century.

CSO: 2600/1219

## PHILOSOPHICAL ORIGINS OF 'NOT' PROGRAM CONTROVERSY VIEWED IN POLITYKA

Warsaw POLITYKA in Polish No 27, 2 Jul 83 p 4

[Article by Jerzy Kleer: "Skirmishing Over the Reform"]

[Excerpts] The most recent meeting of the Economic Reform Commission served as a forum for the pursuit of a philosophical quarrel over the dimensions and nature of the changes taking place in our economy. Questions were raised about the validity of some of the principles which lie at the foundations of the entire legislative process that has been gradually reshaping the national economy through the establishment of new economic mechanisms and levers.

Although the main item on the agenda of this Commission meeting was supposed to be the "Policy Guidelines for the Streamlining and Consolidation of the Institutional Machinery of the Economic Reform After 1984," the ensuing debate in fact revolved mainly around an assessment of the "Draft Program for Amendments to Key Laws Governing the Performance of the Institutional Machinery of the Economic Reform" as drawn up by members of the NOT [Naczelna Organizacja Techniczna--Chief Technical Organization] Committee for Economic Affairs and the Economic Reform. This draft program called for amendments to seven laws, i.e., the laws on state enterprises, workers' self-management in state enterprises, social and economic planning, prices, financial management of state enterprises, taxation of public-sector institutions, and authorization to engage in foreign trade activities. Thus, it focused on the whole range of laws which define the meaning and substance of the economic reform program.

What were the motives of this task force which, with the approval of NOT's executive leadership, decided on making a move that is in effect tantamount to calling into question everything that has been accomplished to date in the area of implementing the economic reform program? We can get an idea as to some of the reasons behind this action by reading the preface to the "Draft Program."

"The point is, with reference to efforts aimed at creating incentives designed to stimulate enterprise economic performance, that we need to pass laws which will finally enable institutional mechanisms to come into play that are geared toward boosting output, increasing labor productivity, lowering operating costs, promoting technological progress, and other factors which are clearly missing in the current phase of the reform's implementation. Quite

to the contrary, existing laws governing the economic reform program run totally counter to the needs of the government and the Polish people. This is borne out by numerous observations, assessments, studies, and polls, but it is borne out first and foremost by the performance of our economy and its impact on the social situation."

The authors cited the following additional arguments: "The economic situation has undergone a tragic deterioration" and "at the most, one-third of all management personnel are for the reform, while five-sixths do not understand the reform at all." The substantive premises of the "Draft Program" were challenged and refuted during the course of the debate. It was noted that the economic situation, to whatever extent it may not be all that good, is still gradually getting better, while the figures which were added up as to how many managers support the reform and what percentage of this professional group does or does not understand the reform are totally at odds with the way things really are. But, in my opinion, this is not what is most important. The crux of the problem boils down to the question as to what is the nature of the proposed amendments to laws which have only been in force for around 6 months.

There is no way in which I can present a detailed account of all the proposed amendments in this one brief article. So, I will only go so far as to cite a few examples which reflect the general philosophy that inspired the authors of this document.

Thus, within the context of the law on state enterprises it is suggested that: "The director is the government's representative within the enterprise. The director is always appointed by the enterprise's parent agency": "...some responsibilities falling within the realm of workers self-management are delegated to the workers' council." "In the event that a workers council permits an establishment to be run in a manner that is inconsistent with the public interest, the parent agency has the right to suspend the workers council until such time as conditions exist for its reinstatement." "During a period in which a workers council is placed on suspension the director will bear full responsibility for managing the affairs of the enterprise." "In dealings with trade unions the workers council will always act in unison with the enterprise director."

"The draft version of suggested amendments to the law on social and economic planning is geared toward placing planning functions in a role subordinate to management and administrative functions in the various tiers of the economy...." "The social planning process cannot rely exclusively on seeking the advice and counsel of public opinion, which as planners well know from experience almost always leads nowhere."

These few passages excerpted from the "Draft Program" suffice to give one an idea as to the general thrust of the NOT proposals, which are geared, firstly, toward constraining the direct and indirect role of workers' self-management institutions, secondly, toward the re-establishment of a hierarchical management structure that in effect tends to equate the interests of officeholders



with the public interest, and, thirdly, toward the propagation of total faith in the value of administrative directives as a tool for running the national economy. Regardless of whether or not this was the intention of the authors of this document, this amounts to an across-the-board attempt to undermine the philosophy of the economic reform program. And this has nothing to do with the fact that some of their proposals may make more sense than some of the provisions contained in the various economic reform laws passed by the Sejm.

During the ensuing debate that unfolded at this session of the Economic Reform Commission the proposals advanced by the NOT officials were totally rejected. It was pointed out in this connection that any attempt made at this stage to amend laws already on the books is bound to lead to the destabilization of the economic system, which at the expense of much pain and effort is gradually being restored to some kind of institutional equilibrium, that the validity of the economic reform program, which is beginning to make inroads at the enterprise level to an ever increasing extent, cannot be called into question, since to do so would foster confusion and uncertainty among managers and workers, and that all of these proposed changes might wind up by wiping out all of the positive developments that one can already see taking place in the Polish economy. It was stressed during the debate that the NOT program is bound to lead to the growth of the bureaucracy, to the perpetuation of the domination of higher-ranking administrators over enterprises, and to the drastic curtailment of the latter's autonomy.

The question that needs to be asked is as follows: What are the reasons behind the drafting and strenuous advocacy of this document? What is the origin of this vision of an efficiently run technocratic-managerial system based on the issuance of commands and directives? Are these ideas really the result, as one of the participants in the debate tried to suggest, of a failure to show sufficient respect for the status and opinions of the great multitude of this country's engineers and technicians? I have my doubts about this. If we make a careful study of who was really running things during the 1970's at the enterprise level and in higher-ranking organizations, we will find that the people in charge were in fact engineers, and not economists. In making this observation I am not trying to shift the blame for our misguided economic policies. All I am trying to do is point out that some rather fundamental differences exist in the approaches of engineers and economists to an understanding of economic processes. In this connection I believe that the various visions of how a technocratic-managerial system should be run stem mainly from the fact that at least some professional engineers do not have all that much faith in the prospects for the establishment of a pattern of give-and-take relations between workers' representative bodies in the enterprise and the enterprise management staff. Hence all of this nostalgia for the old, bankrupt system. Anyway, this problem is much more complex than this, and all I can do here is call attention to the fact that it exists.

## BRIEFS

**TAX BREAKS FOR FUEL SAVERS**--In conformity with the ruling issued by the minister of finance a payroll tax deduction has been allowed for public-sector enterprises paying out fuel conservation bonuses to employees. Awards issued for this reason were exempted from the taxable wage base. A similar ruling was also issued by the minister of labor, wages and social affairs. The latter ruling exempted bonuses paid out for liquid fuel conservation efforts from the collection of taxes paid into the State Vocational Activation Fund. As Dr Ludwik Bednarz, director of the Department for the Rationalization of Fuels and Energy Consumption, mentioned in an interview with a PAP journalist, enterprises have on numerous occasion called attention to the fact that the conservation-minded management of liquid fuel resources has been obstructed owing to the taxation of bonuses awarded to workers in recognition of their fuel conservation initiatives. This has meant that in many plants, fuel and energy conservation drives are simply not worth the effort. The ruling of the minister of finance and the executive order issued by the minister of labor, wages and social affairs are turning this situation around. Fuel conservation bonuses and other related payroll components have been exempted from taxation and the collection of FAZ levies. It is important to note in this regard that these rulings are retroactively effective, i.e. as of 1 January 1983. These recently issued executive orders should contribute to greater efficiency and conservation in the management of fuel resources. [Text] [Warsaw TRYBUNA LUDU in Polish 19 Aug 83 p 2]

CSO: 2600/1232

SOCIOLOGISTS FOCUS ON 'EMPLOYMENT' IN KRAIGHER COMMISSION DOCUMENT

Zagreb DANAS in Serbo-Croatian 5 Jul 83 pp 25-26

[Article by Djuro Zagorac: "What the Self-Management Movement Is About"]

[Text] The Commission on Economic Stabilization has completed its work, and everything that has been done is being submitted for an evaluation by the general public. Everyone will have an opportunity to express his judgment, but it is now already clear that the main and searching examination will take place in the SFRY Assembly. Certain determinations, which were forced by time and current economic trends, have already been "checked" and incorporated in economic policy measures.

Numerous scholars participated in the work of the commission and in drawing up the documents. Their knowledge, views, and assessment are valuable. But on this occasion we will limit ourselves to "examining" the documents just for one angle, the angle of the sociologist. How do people in this profession view the individual reports and what else are they pointing out?

The Concept of a Crisis

It should be noted that the sociologists had their own subgroup and drew up a separate report. They thus arrived at their own united view, and among other things, Silvano Bolcic says the following about it:

"We are convinced, on the basis of everything we know about what is going on in our society, that the unfavorable trends cannot be designated with just the term economic instability, and that therefore social actions cannot be conceived solely in terms of economic stabilization. Feeling that in recent years there have been different forms of social disintegration, a decline in the effectiveness of all mechanisms for guiding society, a spread of phenomena that are out of step with the development of the system of socialist self-management, a deterioration in living conditions, and a lowering of the level of satisfaction of many needs for most members of society, we think that in social theory such a state can be designated a state of social crisis."

The fact that the sociologists decided to declare the situation critical, Bolcic says, does not mean that they view the present situation in more dramatic terms than those who do not use this term. On behalf of the subgroup of sociologists, Bolcic furthermore points out that they do not think that this has anything to do with some sort of situation involving a "collapse of the system" or a crisis in the "prospects for the self-managing socialist development of Yugoslavia." Instead, through this assessment of the situation, they are pointing out the complexity of the causes of disruptions in Yugoslavia's economic development, and thus pointing society toward the broadest possible social mobilization, toward actions and changes in behavior, which cannot be reduced merely to improving the economic system, because the social relationships that have led to certain illogical phenomena have to be changed.

Although they lack complete scientific proof, the sociologists think that most of the members of our society see the way out of the present crisis in a continuation of the basic self-management socialist orientation in development, increased responsibility on everybody's part, more dedicated work, and more democratization of decisionmaking in all spheres and at all levels of society.

#### "Social Movement"

Since there is full agreement on the commitment to socialist self-management--and for the sociologists this is the main and only basis for initiating action--for making stimulating and unblocking all potentials making it possible to fulfill long-term commitments and to build a socialist society of free and associated labor, how should this general action be initiated, and who should bear the chief responsibility for it? In their report, the sociologists assign this role to an organized social movement for full self-management.

Using the word "movement" is perhaps not the most fortunate choice, since it can be associated with various movements and bitter experiences. The sociologists are also aware of this, and Bolcic adds:

"We were aware that the term "movement" could cause certain misunderstandings. Nevertheless, we see it as a valid theoretical concept, which denotes a form of mass action by people that is directed toward certain social changes, without which in our situation there can be no continuation of the socialist revolution in its deepest and broadest meaning. A movement with united action by people is not achieved just through organization, but also through interest and ideological agreement. This is not to advocate any new subjective force in our society, but rather as broad as possible an involvement of all forces committed to socialism."

In addition to advocating this, the sociologists think that the activity of the League of Communists [LC] is extremely important for further strengthening the forces of socialism and the "movement for the development of self-management" in our society. The sociologists, in fact, think that

their task is to develop more extensively the concrete changes through which the LC and other subjective forces in socialism could adapt to the requirements of the present social situation.

Employment is one of the areas that the sociologists have dealt with in particular, and to which they are making a contribution. In their report, they propose a somewhat different employment policy from the one that is indicated in the concluding report of the Kraigher commission.

#### Priority for Employment

"I am convinced, possibly also because of my professional bias, that we should establish employment as a priority, and not just because in our society every person has to have an opportunity, as well as a right, to work. Greater employment would create much greater opportunities for resolving the economic crisis than a direct reduction of inflation at great expense as a result of increased unemployment," Vojin Rus stated.

Rus is in any case a great fan of the "self-employment movement," which has acquired worldwide dimensions. In the committee's report, the basic organization of associated labor is the one that is supposed to be responsible for employment policy. Rus thinks that it cannot fulfill this important social role, in view of its basic obligation--to produce as efficiently and cheaply as possible. "Self-employment, they say, has a great future, and socially it should be assisted in various ways, from advice on what to do and how to introduce new working hours." This Ljubljana sociologist asserts that in Slovenia the retirement period will last for 18 years, and that for several reasons, there is no justification for leaving people with nothing to do for such a long period. He consequently proposes that pensioners and beginners have shorter working days, such as 4 hours, for example, so that the former would not feel themselves to be "written off" and living at someone else's expense, and so that the latter would be given an opportunity to start families and to complete their education, for which they do not have enough time. Such a reduction in working hours would create greater opportunities for employing those who do not have jobs.

#### The Kind of Conservation

The sociologists do not agree with the conservation policy that is advocated in the commission's documents. They are against a conservation that brings a poorer quality for a "more primitive goal in life," and they favor a form of conservation through which people would "live more cheaply, but better." We believe that we would all accept this "formula" of the sociologist, if we could only apply it.

The comments by Neca Jovanov are also interesting in light of some of our current trends. Jovanov considers the trade union's action--to separate work from idleness and force those who do not work to leave their jobs--to be a mistake, for the following reasons:



"No one has attempted a serious analysis to establish that it does not pay people at all to work! Our problem is not to get rid of workers who do not work, but rather to give them material incentives to work.

I read that the Trade Union of Slovenia officially requested an explanation from the Trade Union of Croatia about how it was possible for workers to earn an average of about 3.5 million old dinars in one factory in Zadar. What interests me now, from the standpoint of my understanding of socialism, is why it is that the trade union is not looking for an explanation of why 50 to 60 percent of the workers are receiving less than 1.5 million old dinars.

#### Changing the Conditions

In analyzing the present social situation, the sociologists also point out the "systemic regulation," which has been transformed into a "hyper-trophied organizing and administering," with a multiplication of mediating groups that frequently resort to a bureaucratic-technocratic organizational model, in which initiatives for making work more efficient are lost in a hierarchical division of jurisdiction, and where the capacity for a creative response to problems is frequently limited to the creative capacity of the officials and executives in that hierarchy, while that hierarchy is often informal and extrainstitutional. How should we get rid of the established practice and the established "links," and who is "responsible" for all of this?

Mihajlo Popovic thinks that what is responsible for this is the existing sociopolitical system, which has "made it possible" for people to behave in an economically irrational manner, and what is worse, even encouraged them to do so.

"We have to change the behavior formed by this system. This is difficult, because changing the system and behavior frequently means abandoning privileged positions, beginning with etatism, all the way up to certain economic and other social organizations. Because of all this, a crucial role is played by the LC and other organized political forces, and above all by their leaderships, from the viewpoint of Yugoslav society as a whole. This does not by any means mean denying the significance of the autonomy of republics and provinces. In this regard, it is necessary to free ourselves of illusions, prejudices and errors," Popovic says.

#### Criticisms and Praise

There are those who complain that in Yugoslavia one cannot speak in a genuine manner about changes in the system, the constitution, or the Law on Associated Labor without being "declared" an enemy, a denier of our achievements. Here is what Jovanov thinks about that:

"Regardless of the extent to which any normative act, in this case the constitution and the Law on Associated Labor, is ideal at the moment when it is adopted, its value is by its very nature temporary and limited. Only

the communist movement and its thought can be above a normative act. We recently held a roundtable about another subject, and when one colleague brought up the question of some provisions in the Law on Associated Labor not having been verified, or being bad if they had been verified, he was immediately told that he was questioning a man who was no longer among the living, that he was against him! I think that this is a kind of deception about what kinds of activities are suitable; it is even a deception of the people in question."

We have to emphasize once more that the commission's documents have dedicated adherents, but also sharp critics. It is good that this is the case, especially if they have a common goal. It is not true that everything in our society is a "mistake" and that everything has to be changed. We have crisis phenomena, which are more than anything a result of accelerated development. Is it an unforgivable sin that we wanted to develop and did develop faster than our actual capabilities permitted? It is precisely in stabilization, reform, or a movement that we have something in which to become more active.

Criticism is necessary and it should not be suppressed. If solutions are also offered along with criticisms, then that is good. Unfortunately, we still have more of the latter.

9909

CSO: 2800/186

GRLICKOV DISCUSSES ECONOMIC, POLITICAL SITUATION

Belgrade INTERVJU in Serbo-Croatian No 56, 22 Jul 83 pp 4-10

[Interview with Dr Aleksandar Grlickov, member of the SAWPY Presidium, by Slavoljub Djukic: "There Is a Way Out of Every Situation"; date and place not specified]

[Text] [Question] How in brief would you assess Yugoslavia's present moment? Is this a "crisis," or are we dealing with "difficulties," just to mention these two terms which are in frequent use?

[Answer] Unfortunately, these two terms are still in use in our political vocabulary. They are not synonyms, so that it is not a question of a linguistic problem, but of a more realistic or less realistic evaluation of the situation in our society. I think that the process of learning about the situation in our society is behind us, a process which nevertheless was a slow one in view of our needs and capabilities. The right diagnosis has been made, which is that our society finds itself in a profound economic and social crisis. We are also confronting moral and psychological problems which should not be underestimate by any means. I therefore think that there is justification for the realization that we need a total renewal of our society on the foundation of its basic constitutional and programmatic values and commitments.

[Question] In the fall of 1980, in one of your public speeches, you advocated an economic reform, but now you are speaking about the need for a total renewal of our society. Is that the same thing, and what is the difference?

[Answer] It is true, at that time I did favor an economic reform, that is, a different strategy in development policy, as well as an overhauling of the mechanism of the economic system. Even today I consider a social and economic reform necessary. Incidentally, this can be unambiguously concluded from the long-range economic stabilization program. Penetration of our reality and of socioeconomic and political and ideological events to any depth makes one more and more aware of the need for reform, which individuals, for reasons unknown to me, have been afraid of, and perhaps even now they fear it. So, the economic reform I advocated in 1980 is now becoming only a part of society's overall socioeconomic renewal.

[Question] Yet what do you mean by a socioeconomic renewal?

[Answer] I have already told you part of it. I mean a new strategy in development policy; a radical overhaul of the mechanism of the economic system, especially certain laws embodying the system, and necessary adaptations in the political system, and that means in the functioning of the delegate system, correction of political practice in performance of the role of the League of Communists, the Socialist Alliance and other politically organized socialist forces; dispelling the great fog and envelope which we rightly identify as moral problems of society (idleness, abuse of position, irresponsibility and the inequality of the criteria of responsibility, and then various types of stealing, corruption, and so on); I also attribute very great importance to social inequities which have come about in our society as the result of earnings outside the workplace and altogether without work. On the whole renewal means to me a constructive long-range program that is not only economic, but is also social, a renewal of the system of socialist self-management with all its fundamental values, and actually a furnishing of strategic and concrete answers to all the questions society confronts today. A part of that strategic program in the sphere of the economy is near completion, and soon its translation into concrete terms will begin. Discussions have been opened up concerning corrections in the political system, the activity of the League of Communists in the political system as well as of the Socialist Alliance as the umbrella organization for all the forces of socialist self-management, is being reassessed. It would be better for all this to be done at the same time, which is why these matters need to be hurried up at this point.

[Question] What in your opinion should the strategic adaptations be in development policy?

[Answer] There are quite a few of them. I will mention only some. I think that an excessive strain has been put on the distribution of the national income, especially in the last 10 years. The high share of investments and of general and budgetary expenditure has exceeded our capabilities, and the enormous foreign debt occurred as a consequence, becoming not only an economic, but also a political problem for the country, one that is now having a powerful impact even on our international position. In the social arena self-management has been displaced and a broad space has been opened for inroads of government interventionism in the economy, which has stimulated impulses for governmentalization of society and has threatened the basic values of the constitutional order. No economic system and no economic mechanism can stand that kind of strained distribution of the national income without a threat to their basic values.

Nor has the distribution of the national income among the various working classes and social categories been what it should be. The burden is not being put fairly and uniformly on all categories. The working people in direct production have been favored the least. Private agricultural producers and social strata in the administration are having a better time.

[Question] To what extent is the League of Communists adapting to the situation described?

[Answer] It is trying to adapt, to find itself in its political-ideological role of a vanguard operating within the political system by the force of its arguments. It is having a hard time doing that. It is a question both of habits and also of resistance. Democratization of political life within the League of Communists itself is an essential precondition for it to do that successfully. Equally important here is democratization in personnel policy, an area in which there are quite a few blockages leading to cases of negative selection with immeasurable consequences for a revolutionary movement. So that is another segment of the renewal.

[Question] It has been argued that the ideological foundations of our system are not in crisis, but above all personnel policy, which is often built up on a monopolistic basis, not subject to influence of the public.

[Answer] I would not boil everything down to personnel policy. Verification of development strategy and of the mechanism of the economic and political system signify something in and of themselves. But I would like to say this about personnel policy: in spite of the advanced democratic mechanism of personnel policy, and that signifies selection as well, there are in practice significant overlays of monopolization and the desire to make it a function of the interests of individuals and of informal and semiformal groups. This distorts positive selection, detracts from competition in knowledge, in work, and in responsibility, and so it also enters into the world of moral standards and behavior. We ought to make radical changes here. Just like everything else, it will not be easy, but we have to correct the negative tendencies so that knowledge, work, respect, modesty, morality and devotion to principle become the key criteria. This also presupposes, of course, further improvement of the mechanism of selection at all points where elections take place and at all levels.

[Question] Several questions follow from your answer. First: Is improvement of the election system, as you say, also a problem?

[Answer] Yes. We have a democratically advanced election system. However, in spite of that practice is controversial. Perhaps we might make it mandatory in practice for there to be more than one candidate and for voting to be secret.

[Question] That is a commitment in our program. Why is it often not respected in practice?

[Answer] That's the problem. There have been attempts, and certain adverse occurrences even in those attempts. I am thinking of unscrupulous personal battles and formation of groups of various types, that is not to be underestimated. Which means that we have to decide how and in what way to democratize personnel policy. Whether by having more than one candidate and the secret ballot we have more chances of freeing ourselves of various cases of personal and group usurpation and other undesirable things and of establishing a direct relationship between selection, the disposition of the public, quality and responsibility. In any case we have to do something to democratize personnel policy, from the top to the bottom of the social structure, so that all people at all levels behave responsibly toward their delegate base.



[Question] Responsibility in our country is like a *fata morgana*, like a force over and above our powers and abilities, where many spears are crossed and where often invisible forces are operative, creating relations in which incompetence, bureaucratic arbitrariness and even idleness can find cover.

[Answer] Responsibility can be essentially strengthened through the institutional system of selection itself, rather than the system of voting, on which I have presented some of my reflections, which also might be a topic of discussion. But aside from that we also need to create the appropriate democratic social climate unfavorable to irresponsible behavior, idleness, careerism and the rest.

[Question] Quite a bit is being done to popularize what is referred to as personal example. However, can we essentially solve the question of responsibility through personal example, or must we create relations in which people have to behave responsibly?

[Answer] Personal example is an essential prerequisite for the functioning of the democratic institutional system. Personal examples are in the mass a real pillar of support for this system, and conversely: the institutional system should encourage, multiply, and, if I might so put it, even compel personal examples.

[Question] To what extent and in what direction is the difficult economic situation affecting the political situation?

[Answer] The idea that the economic situation is difficult, but the political situation good, is untenable. Just because our people are putting up with the economic difficulties patiently does not mean that they are content, but rather that they are living in a hope that it will be better. They want to contribute to correcting the errors which have already been made. But we dare not forget that the economic crisis has opened up more room to various conservative ideologies, to nationalism, to a closer approach of religious and other beliefs which we encounter today in a far more intensive form than in the past. This is not without influence on the political situation.

[Question] To what extent are today's economic difficulties the result of certain shortcomings in our political system?

[Answer] Among other things, in the domain of the political system there should be debate on the institutional solutions and the political practice of relations between the republics and provinces on the one hand and the Federation on the other. In spite of the institutional solutions, there have been cases in political practice when on certain issues, which unfortunately are becoming more numerous, the Federation acts as the mechanical sum of the interests of the republics and provinces. Certain ideological misunderstandings about the character of the Federation are involved here. It is not uncommonly said that it is irrelevant to us whether we are instituted as a single market or as a common market. What the world has learned to date in theory and practice about the quality of the two is evaded. There is an ideological fog bank in that the opinion has been shaped that the single or unified market is a



synonym of centralism and unitarism in the political system, while a common market would be the synonym of equality of the nationalities and ethnic minorities. That the former tends toward an abstract supranational interest, while the latter offers possibilities for synthesis of authentic national interests. The constitutional commitments are out of step with certain laws embodying the system which have encouraged the latent potential for division and have considerably contributed to disintegrative tendencies, especially in the economy. These tendencies, in collusion with decentralized statism, have taken captive socialist self-management, establishment of linkage, conclusion of accords, processes of integration at the borders of the republics and provinces and indeed even smaller regions.

You can conclude from this that certain adaptations in the institutional political system are becoming indispensable precisely in order to rehabilitate the constitutional prerequisites.

[Question] There are four terms mentioned most often in these discussions: "changes in the political system," "eliminating shortcomings in the political system," "reform of the system" and "further improvement of the system." Which of these terms do you like best, and why?

[Answer] I do not attribute importance to terminological expressions if there is consensus that there should be change and what should be changed. And if that consensus does not exist, then terminological expressions reflect disagreement with changes in general or with the pace of change.

[Question] Is there a danger of the economic difficulties having an adverse impact on further democratization of society?

[Answer] Certainly. Economic difficulties can slow down and block the process of democratization. Let me remind you: economic crises do not always operate on behalf of progress, on behalf of the Left. They have been and are even a source of rightwing conservative ideas. Even in our case the influx of conservative ideas has grown considerably in the context of the economic crisis.

[Question] Do you mean to say that the process of further democratization of our society could potentially be threatened?

[Answer] I do not preclude that, although I feel that our only true alternative is a further democratization of society. This is the fourth of the notable crises in Yugoslavia. We have overcome all the previous ones by making democratic inroads in all sectors and in the entirety of social life. I do not see convincing reasons why we would not also overcome this crisis by stressing further democratization of social life on the foundations of socialist self-managing democracy.

[Question] But have that concept and the content of socialist self-managing democracy been elucidated?

[Answer] For me, yes, although at times I myself note that some people are cautious when insistence is placed on the need for democracy, on individual and collective human freedoms, fearing that this might "smack" of the bourgeois conception of democracy. I have presented and elaborated my conceptions even in writing, so that I do not intend to elaborate on them again here to any length. But I will say something briefly. First, the problem of democracy, of individual and collective human freedoms, cannot be regarded outside the production relation, outside the power relationship of class forces and political forces. Second, every socialist society, including ours, should and must adopt individual and collective human freedoms which man has acquired in bourgeois society as the basis for their further development. Those freedoms are not a gift from the bourgeoisie, but the result of class struggle. The League of Communists of Yugoslavia has also undertaken the task to seek a solution as to demopolizing its own self (I think this is the only such case in the world) in order to create the political space to shape democracy, self-managing socialist democracy, and thereby overcome the monopoly of suprapolitical life. Everything which was desired has not been achieved in practice, but there does prevail a deep conviction that there is no socialism or self-managing socialism without democracy, without individual and collective human freedoms, and vice versa. That is why further democratization of society is a prerequisite for overcoming the crisis.

[Question] Several years ago you raised the issue of the need for democratic dialogue, which had quite a response at the time. Do you feel from this present vantage point in time that that problem is getting the place it must have in our society?

[Answer] At that time and in certain quarters that initiative did not get the best reception. I do not know whether it was a case of one of those misunderstandings in our movement or a case of real resistance. The reality of our society's development, by reason of its own needs, has more and more had to accent and nurture dialogue. Incidentally, I do not see how it is possible to achieve a democratic reconciliation of the pluralism of interests in self-management, in which there is a notable content of political interests as well, without dialogue. Dialogue has more and more gained the full right of citizenship. We encounter it in all bodies, in political and other organizations, in the news media, in magazines. It needs to be further encouraged, and, of course, upgraded, refined. Epithets should be replaced by a persuasive line of argument, since people make choices on the basis of argument. We have opened up all the topics, there are no taboo topics. We should conduct an open, public and tolerant dialogue about everything and with everyone who accepts the basic values of our society. Why all topics? Because I feel that there is no absolute and final truth, so that dialogue is a means of ongoing reassessment and adaptation without which a revolutionary process cannot be progressive. The results to date can be an impetus for new breakthroughs. Of course, this presupposes that we cannot conduct a dialogue about the basic values of our society nor a dialogue with anyone about questions of power, about whether we will preserve it or give it away to hostile forces.

[Question] In one plenum of the LCY Central Committee you reacted polemically when it seemed to you that scientific thought and creativity in general were

in a way being underestimated. Have our political forums taken up a large load on their back? Is this a way in which all the creative and capable forces can be set in motion for getting out of the crisis?

[Answer] The forums have indeed taken on too much responsibility. But they cannot successfully discharge their obligations without direct and daily communication with the available creative forces and capable scientific potential. That potential should be absorbed, should be incorporated into the work that is done, but not in the sense of being a service to day-to-day politics, but rather it should be given room to arrive at its knowledge objectively and by the scientific method. That knowledge need not always be in line with the official ideas which are in effect, some may even be the opposite, but it will provide inspiration and afford the possibility of an alternative choice.

[Question] Today it is clear to everyone that a policy of relying on our own resources is the only reality. But it presupposes involvement of the entire scientific potential. Are we mindful of that fact?

[Answer] That is always a precondition for all progress and for a revolutionary movement. So, if something should be changed, and it should be, then that is a strategic undertaking. Carrying out a political inversion of the lines of the struggle for people. The slogan: Who is not for us is against us, ought to go: Who is not against us is for us. In that way we can rally all the creative forces which think differently in the framework of our basic values, but which are seeking the truth, which are seeking possible and probable solutions. Some people are too quick to refer to people who offer other alternatives on some specific issue, even though they may differ in strategy, as an opposition. For example, the ways of getting out of the crisis, the assessment of the causes of the crisis, the assessment of the situation in our news media and ways of overcoming the difficulties....

[Question] Today we are all talking about the danger of nationalism. But by and large we are combating it with public condemnations and by legislative means. Can the battle against nationalism be waged without freeing ourselves of its essential causes?

[Answer] No, it cannot. The battle against nationalism cannot be won with slogans. It can be won only by removing the true causes of nationalism. Some of the strong causes are implanted in the economic sphere, and some in the strengthened statist-bureaucratic forces. The growth of nationalism in the recent past has been receiving thrusts not only from nationalistic forces, but has again been taking up residence, as in the mid- and late seventies, in the League of Communists itself. (I am referring to certain places and certain individuals.) Incidentally, when that happens, then it gains strength.

[Question] Recently there has been quite a bit of talk about inroads of hostile and oppositionist forces. How real is that danger? What creates the favorable soil for expansion of unacceptable ideas, what is the most effective form of response to such challenges? Finally, are we avoiding certain essential topics by emphasizing the danger of an enemy?

[Answer] Every concrete society has its enemies. We also have hostile forces for whom anticommunism, antisocialism and antiself-management are points of departure. There is always a real and potential danger of those forces making an assault on the constitutional order under certain conditions. The weapons in the struggle against them are legitimate, just as in all countries which defend their constitutional order. Practice, successes in achieving the strategic goals of the leading political forces, has equally great importance in that struggle. To make a realistic assessment of their strength and indeed of their chances one needs to enter more into the interests of the social base, into its real interests. In analyzing the social base and its historic and concrete interests one should assess whether it favors recapitalization of the country, whether it favors a return to statist-bureaucratic socialism, or does it favor new breakthroughs in development of a socialist self-managing society and its humanistic and democratic content? I think that our social base favors this latter, along with a strong pressure to remove everything that is opposed to the goals which have been proclaimed. I do not deny that in reality there are cases when the terms "hostile" and "oppositionist" are used wrongly, and that is not good, since it mixes up the forces, it isolates the socialist forces, above all us communists.

[Question] Is there a danger of a dogmatization of consciousness under the conditions of the crisis?

[Answer] There is, and it is notable in the efforts to preserve the status quo in all its specific details, in the economic and political system. There is a desire to preserve some of the mechanisms of the economic system in the name of the development of self-management, but actually on behalf of partial quantitative calculations. We are confronting currents of that kind even today, as indeed has been the case in the world's development to date. This is the conflict between the conservative right and the progressive left in capitalism, of the dogmatic forces and the forces of change and adaptation in early socialist societies. The League of Communists of Yugoslavia is combating dogmatism in general, including its own. Now it must also combat "self-management dogmatism," which desires to perpetuate certain concrete solutions, so that those forces are objectively against the LCY Program, which states that nothing is so sacred that it cannot be replaced by something better and more human. Even our own dogmatic forces believe that the truth always emerges in final form, some of them that it emerges only in one form. When those positions are taken, there is broad room for meandering. Some people are not bothered by the process of disintegration in the economy caused by atomization [formation of ever smaller independent organizations of associated labor] to the limits of technological-and-economic optimality, as though the greatest possible atomization, rather than the natural processes of concentration, was appropriate to self-management. One might also conclude that dual money, the only one in the world, is appropriate precisely to self-management, although the conflict between the dinar and foreign exchange has obviously shattered the process of reproduction on the unified Yugoslav market.

[Question] Recent personnel changes have put the question of the length of the term of office on the agenda. There are more and more advocates of making it longer. What is your opinion?

[Answer] I attribute greater importance to collective leadership than to the length of the term of office. We still do not have experience with collective leadership bodies. Even people who do not have a 1-year or 2-year term of office have too much power in practice, they set themselves apart from collective leadership, and they are so treated in the public, rather than as the first among equals. Second, I do not think that in the Federation we should back off from the 1-year term for the top positions. It is another question whether this principle should be applied in all sectors of life, where no sort of authority is being exercised, in various civic associations, and indeed even in committees in assemblies, economic chambers and elsewhere.

As for the republics and provinces, experience has shown that the 1-year term of office has not been preserved, which means that a process of new adaptation has begun. This is good if it is not at the expense of collective work and does not result in the production of "head men," both big and small. Cases like that can be eliminated if the term of office is limited to 2 or 4 years without the right of succession. This also presupposes democratic methods and a democratic spirit.

[Question] We have augmented the personnel potential through collective leadership. To what extent have we democratized the selection of personnel?

[Answer] I think that it is high time that we homogenized the generations, bringing all the age groups into responsibility at all levels. It is not possible for just one generation to bear responsibility for today and tomorrow. Every age group has its own potential, but also its own limits. For precisely that reason we need to include all three generations in all centers of power and at all levels in order to make a synthesis of greater experience, greater and fresher knowledge, and energy.

[Question] To what extent have we acknowledged the difficulty in achieving normal selection of personnel by restricting the length of the term of office?

[Answer] We have acknowledged that usurpation and slowness of the process of democratization are potentially and really present, and we wanted to correct this through the institutional mechanism. Experience will show whether we are successful in this. We encountered in this the problem of sometimes depriving ourselves of people who have knowledge, abilities and prestige.

[Question] There is frequent talk about federalization of the party. What basis is there for such fears?

[Answer] There is rather adamant talk about "federalization of the League of Communists." The process of federalization occurs if the veto is legalized in the League of Communists, which is contrary to democratic centralism. Federalization does not occur if there are differing opinions on the same issue in different quarters. But if democratic centralism is to be effective, there has to be a process of democratic formulation of policy. The tendency toward centralism evokes the idea of federalization, and that signifies undemocratic reconciliation of differing interests, or simply the imposition of the will of the larger and stronger, various coalitions around particular partial interests, or simply the invoking of a veto.



[Question] You are a professor, a professional politician, and a scientist. Are there difficulties in reconciling scientific work and political office?

[Answer] Basically there are not. In the preface to one of my books I wrote that I have striven to strike a bargain as little as possible with my own conscience. I think that I have answered you to the effect that there are certain limits on opportunity.

[Question] How much has your view of the world changed since the time when you became active in the communist, socialist and progressive movement?

[Answer] My view of the world has changed a very great deal. The dialogue with representatives of all political forces in the world with whom I have had occasion to communicate has broadened my horizons and has also verified the arguments supporting my own views. This has been a dialogue with people who have a quite opposite opinion. In that way one builds up experience, a view of the world through differing conceptions and the confrontation of differing views.

[Question] Over a lengthy period you have been communicating with many distinguished figures in the working class movement. What has your experience been, what has been most difficult for you?

[Answer] I cannot say that something has been the most difficult. It has, of course, been difficult for me at certain moments when there were irreconcilably differing views, and then one has to seek in all that points of nearest approach, defend the policy of one's own party and society, and on the other hand maintain dialogue and cooperation, since otherwise the desired objective cannot be attained. Viewed from that angle it was most problematical at the Berlin Conference. But I also gained valuable experience there.

[Question] The Yugoslav public associates you quite a bit as a figure with the Berlin Conference. But you have also gained a great deal of prestige in the working class and progressive movement.

[Answer] That is certainly because in the preparations I was the head of our delegation, and I did take pains to defend our views authentically, but with the most acceptable line of argument possible. As a matter of fact our position was based on the understanding of the League of Communists as a collective intellect, both as an insight into our strategy, our theoretical and political-ideological views, and also as an insight into the conceptions of the other parties and movements. Perhaps the Berlin Conference would not have occurred the way it did without those preparations, without the confrontation of differing and often opposed opinions in the communist movement itself. And it was precisely the pluralism of those conceptions that contributed to the finding of common views, independently of the fact that later there were differing interpretations. I think that some of the views at the Berlin Conference confirmed our views, among them those which were the subject of the conflict in 1948.

[Question] One question on a private topic, if it can be so put: How do you get to write, how do you manage on top of so many duties?

[Answer] I try to find the time. I live a highly organized life, both official and private, among other things because of my state of health. In that way time is found for everything; the empty hours are reduced to a minimum. I do not live ascetically, I have my own milieu, social life. In any case, I have my own way of going about things. As I read I note everything that inspires me in books, journals and newspapers. I enter it in a notebook, and in that way I make preparations for future writing. I never read without a pencil and notebook.

[Question] You have held various offices, including those in the executive branch. What has been most difficult for you?

[Answer] I consider three events to have been perhaps difficult in my life. The earthquake in Skopje when I was chairman of the executive council of the republic. In the late seventies, as vice chairman of the Federal Executive Council, I was chairman of the commission for development policy and the system, and on that occasion, because of the well-known differences as to conception, it was unusually difficult for me. And then at the Berlin Conference.

[Question] According to our information, you are preparing a new book?

[Answer] You newspaper people naturally are among those who are best informed. I have just submitted a manuscript in which I attempted to round out certain of my views of contemporary socialism. The book is called "Raskrsce socijalizma" [Crossroads of Socialism], and perhaps it came about under the publisher's influence. It is in fact an attempt to deal with the theoretical, ideological and political problems of contemporary socialism.

[Question] And finally, is there a way out of the present situation in our society?

[Answer] There is a way out of every situation. I think that on one occasion I have already used a Hebrew saying to the effect that for every situation there are at least two solutions and one in reserve. I do not feel that we have a simple way out. But in spite of the anticipated difficulties, there is a way out and must be, assuming full commitment of everyone to the project which will be prepared. I do not believe in simple and painless ways out, just as I do not believe in those who have ready-made answers to all questions in their pocket. I do believe in the ability of the LCY and Socialist Alliance, as the umbrella organization of all the forces of socialist self-management, relying on the creative forces of science, the social base of the working class and other social-and-political strata, to work out as soon as possible a positive program for overcoming the crises and difficulties. Not only in the economic sphere, although it is the essential one. I do not believe in any sort of constructive program if those political forces do not commit themselves to it. Also, in fighting for success, we must always be prepared for defeat, and that means that we must keep a close eye on the dialectics of movement and not depart from reality.

## WHEAT IMPORTS CONTINUE DESPITE BIG HARVEST

AU211807 Belgrade BORBA in Serbo-Croatian 16 Aug 83 p 2

[Commentary by Slobodan Bukmirovic: "Imports-Exports of Wheat"]

[Excerpts] The results of harvest and purchases of wheat have been received, quite understandably, like a balm on the open wound of stabilization. With about 3.5 million tons which have already been purchased, we shall have enough wheat for bread and for the fall sowing. It has been announced with satisfaction that during the coming year there will be no need to give a single dollar for this strategic product--imports are not necessary at all.

The problem is, however, that after a whole series of favorable reports on the production and purchase of wheat, a bit of news arrived from our Adriatic ports at the end of the last week: Some 270,000 tons of wheat imported for several of our republics and the Province of Kosovo are being unloaded from several transoceanic ships. Those mentioned are our federal units whose harvests (or at least purchases--as is the case with Serbia) never suffice to meet the needs of the food supplies for the population.

The contract on delivering the wheat was signed as early as May, therefore at the time when we could not be sure we would have a successful harvest let alone a record purchase. In this context, these imports look justified and reasonable.

Let us conclude: So far all the facts about the imports are clear. A slight headache starts only when we calculate what a ton of this wheat we imported costs and when we compare this with the price for which we will export our "surplus" of wheat. These calculations show that each ton will cost our purchaser about \$170 (excluding the expenses of the credit itself), while we will earn about \$150 for a ton sold.

A serious headache starts when we face the question: How does this whole matter with imports and exports fit into the economic stabilization program? It is true that a certain quantity of precious foreign exchange will flow into the empty cash purses next month and in the few coming months, but viewed on long-term basis (and we have to think that way also), by such "business" we invalidate our own work and its results.

Due mostly to our practice to readily take at any time any world credit which is approved to us--without thinking much about the time the credit will have to be repaid--we have reached the current economic crisis. And yet, even today, when we are aware of the good harvest, purchase, and even export of wheat, we hastily continue to use every "line" of the approved credits: It has been announced that bids for importing an additional 150,000 tons of wheat will be accepted these days.

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## WHEAT DELIVERY PLANS SAID TO BE UNREALISTIC

AE231439 Belgrade POLITIKA in Serbo-Croatian 21 Aug 83 p 5

[Commentary by Biserka Matic: "About Purchases in a Different Way"]

[Summary] This year, it is planned in Yugoslavia to buy a total of 3.46 million tons of wheat from producers--that is, 800,000 tons more than the producers actually delivered in 1982. And yet, despite these plans and the resulting fact that more wheat has already been delivered by the producers than ever before, it is doubtful that the Yugoslavs will have enough bread until the next harvest or that they will eat only their own Yugoslav bread.

It is true that Yugoslavia, as a united country, has a unified social accord on developing the country's agriculture and a unified agrarian policy and that therefore it should also have a unified supply of bread. "But no matter how beautifully and calmly this theoretical truth may sound, it is less and less in accord with our reality in practice. The entity we speak about as our common homeland is more and more conspicuously showing its eight or, at times, even nine parts. Each of the eight federal units--and the Federation, too, is not without its own aspirations in some respects--wants to have its own everything: its own refinery, its own ironworks, its own administration, its own wheat, its own wheat deliveries, and its own bread." It is in the face of these ambitions that the incontrovertible facts of different development possibilities of different parts of the country are often disregarded. For these reasons the issue of wheat deliveries and of bread supply becomes much more than a purely economic issue. "The reasons of borders and divisions which are incomparably greater than the readiness to open a real dialogue about them results in many absurdities and thus it was on the very same day that we heard the news about the country's exports and imports of wheat," although it is a fact that, at this time, Yugoslavia has no wheat to export and no need to import it either.

Kosovo, Slovenia, Serbia without the provinces, Macedonia, and Bosnia-Herzegovina have failed to fulfill their wheat delivery plans at the same time as the country as a whole has increased its total wheat deliveries by one third as compared with 1982. "It is precisely because of this state of affairs that a specifically Yugoslav question arises, the question of



realistic planning," the question of greater aspirations than possibilities. By the beginning of August, Bosnia-Herzegovina had delivered 180,000 tons of wheat--that is, double the quantity of wheat delivered by it in all of 1982 and yet still 25,000 tons short of the 1983 plan. By the same date, Serbia without the provinces had delivered 510,000 tons of wheat--that is, 100,000 tons more than in 1982 but still 240,000 tons short of the 1983 plan.

It is well known that many of our past plans have been unrealistic and that many of the country's social plans and resolutions on its economic development had to be subsequently changed. As regards the plans for wheat deliveries, it is strongly suspected that the planners have failed to consider the fact that two thirds of our country are highlands, that the harvest yield per hectare of wheat is low in these regions, and that, in these regions, wheat is mainly grown for domestic use. And yet, it is for the first time since the period of the compulsory wheat deliveries in the early postwar period that some of the highland communes have again been included in the wheat delivery plans. "And there is yet another question: By whom and at what 'level' has the plan been prepared? Have the producers participated in that task and, if they have, who acted on their behalf?" Were the plans prepared by the cooperatives who operate separately from peasants or were they prepared by the communes which often do not even have a specialized department for agriculture? "Or were the plans prepared at the republican levels with the assistance of cooperatives and communes? If the latter is the case, then it can be said that the knowledge of our republican and provincial secretaries for agriculture who are expected to know everything and provide correct information about the agriculture under their department, is nevertheless incomplete."

It is known that 1.17 million hectares of the total of 1,609,000 hectares of wheat grown in our country this year were in private hands and it is obvious that the social sector alone could never provide enough bread for all of Yugoslavia. "It is the private sector with 85 percent of all arable land in its hands that could achieve this sooner. For this reason it seems to us that nothing should be done to again confuse the peasants. Today, they perhaps live better than the people in cities but it is an old fact that when the peasants have goods others also do not go short.

"Therefore it is necessary to consider the wheat deliveries in a somewhat different manner. We also think that this is necessary in order to know the whole truth."

CSO: 2800/448

## JOINT INVESTMENTS IN UNDERDEVELOPED REGIONS

Belgrade PRIVREDNI PREGLED in Serbo-Croatian 30 Jun 83 p 8

[Text] More and more economic organizations are finding it economically advantageous to engage in joint construction of facilities in the underdeveloped republics and Kosovo. In the first 3 months of 1983 alone about 30 new agreements have been completed for this purpose. That this is a major step is shown by the fact that only 13 such documents were executed for this purpose over the entire period of the last 5-year plan.

The picture is completed by the detail that over the last 2 years and the first 3 months of 1983 agreement has been reached on nearly 300 programs to be carried out in underdeveloped regions. Some of the facilities covered by these agreements have been completed, and many of them are under construction.

During the first 2 years of this planning period alone, 255 agreements have been signed on execution of joint programs representing an estimated value of 125 billion dinars. The share of resources of the Federal Fund for Financing More Rapid Development of the Underdeveloped Republics and Provinces, 28 billion dinars, makes up 22.4 percent of the value of these investments. Since in the interim about 600 proposals have been made for pooling of resources for joint construction of facilities, a new wave of agreements is to be anticipated, inasmuch as economic organizations in both the developed and the underdeveloped regions obviously have settled on joint economic plans.

## Twenty-Five Programs Completed

Enterprises in Croatia are party to 90 agreement on construction of facilities in the underdeveloped republics and Kosovo, while organizations in Slovenia have signed 71, those in Serbia but not in the provinces 56, and organizations in Vojvodina 30 such agreements. Among the organizations in the underdeveloped republics and Kosovo, the greatest number of these documents have been executed by enterprises in Macedonia (106) and in Bosnia and Hercegovina (98). Organizations in Kosovo have signed 40, and ones in Montenegro 13, agreements on pooling of labor and resources for joint execution of investment programs.

More than 70 percent of these programs call for building or reconstruction of facilities in industry and mining, while the remaining ones relate to investments in the development of agriculture. Forty agreements have been concluded to cover investment overruns.

One-half of the investment programs agreed on thus far are based on credit relationships, although income relationships are becoming more common. The principle of distribution of jointly earned income will be applied in execution of 92 agreements on pooling of labor and resources of developed and underdeveloped regions.

#### Enough Information, but Poorly Organized

Completion of the planned facilities will create 33,500 new jobs; this is an aspect of extremely great importance to the underdeveloped regions. As is pointed out by Momcilo Blagovcanin, director of the Federal Fund, 25 programs have been completed, 95 are in progress, and preparations for commencement of investment are underway for 111.

Although there is a steady increase in the number of the programs for whose execution economic organizations in the developed and underdeveloped republics and Kosovo are banding together, the potential and need for such arrangements are unquestionably much greater. At the fund, however, attention is called to the fact that the procedure involved in conclusion of contracts and in the implementation of agreements greatly complicates the efforts of economic organizations, since much of the procedure still depends on the sociopolitical collectives. Particular stress has been laid on this fact at the Assembly of the Federal Fund, where it has been definitely recommended that economic organizations be allowed freedom to conclude agreements. In this way, economic interests would prevail, and this, along with the incentives for pooling labor and resources, would ensure that the programs would have a realistic basis.

Experience has also shown that it is also necessary to introduce a suitable system of information and recording of data for these purposes. In this way, it would be easier for economic organizations to obtain timely reports of potential and planned investments, and monitoring of programs in progress could be conducted more successfully. This is precisely what was advocated at the Fund Assembly: there is enough information, but it is poorly organized.

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